

ARCHITECTURAL RECORD

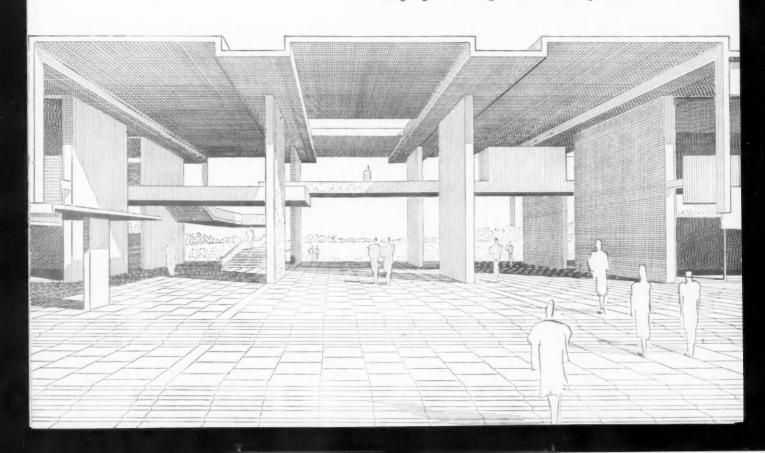
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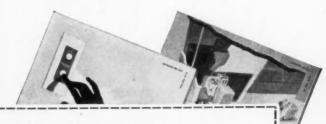


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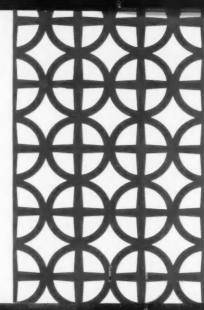
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ARCHITECTURAL RECORD
March 1959
Vol. 125 No. 3
7 1959
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ARCHITECTURAL RECORD
(combined with
AMERICAN ARCHITECT and
ARCHITECTURB)
is published monthly,
except May 1959
when semi-monthly,
by F. W. Dodge Corporation,
10 Ferry Street,
Concord, New Hampshire.
Editorial and executive offices:
119 West 40th Street,
New York 18, New York 18, West York.
Western editorial office,
2877 Shasta Road,
Berkeley 8, California.

Coming in the Record

BUILDING TYPES STUDY: STORES

Stores are for merchandising: and the April study will focus on the very down-to-earth matter of the effect of merchandising principles on store design. An article by President William Snaith will expose some of the data developed by the Raymond Loewy Corporation in its extensive store planning operations. And, of course, stores!

ARCHITECTURE, NOT DOGMA

A portfolio of the latest works of The Architects' Collaborative is a better instructor than any words on the architectural philosophy of the founder of the Bauhaus, and a just rebuke to those who would make Gropius an academician. Not stylistic prescriptions but architecture here.

FOUR TALL BUILDINGS AND WHY THEIR STRUCTURE

Two in San Francisco, one in Seattle, one in Melbourne (Australia): all by the San Francisco office of Skidmore, Owings and Merrill, and all different in structural concept. (And not all metal and glass, and not all curtain walls.)

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Members of Audit Bureau of Circulations and Associated Business Publications. ARCHITECTURAL BECOMD is Indexed in Art Index, Industrial Arta Index and Engineering Index.

Every effort will be made to return material submitted for possible publication (if accompanied by stamped, addressed envelope, but the editors and the corporation will not be responsible for loss or damage.

Subscription prices: Published monthly except May 1959 when semimonthly. U. S., U. S. Possessions and Canada: \$6.50; per year; other Western Hemisphere countries, Spain, to those who by title are architects and engineers, \$9.00 per year. Single copy price except Mid-May 1959 issue \$2.00; Mid-May 1959 issue \$2.96. Beyond Western Hemisphere, excluding Spain, to those who by title are architects and engineers, \$9.00 per year for 12 monthly issues not including Mid-May 1959 issue. Subscriptions from all others outside U. S., U. S. Possessions and Canada for 12 monthly issues, not including Mid-May issue, \$24.00 per year. Change of address: subscribers are requested to furnish both the old and new address, sending if possible stencil impression from magazine wrapper, and to include city delivery zone number, where such is used, for the new address. Allow four weeks for change.

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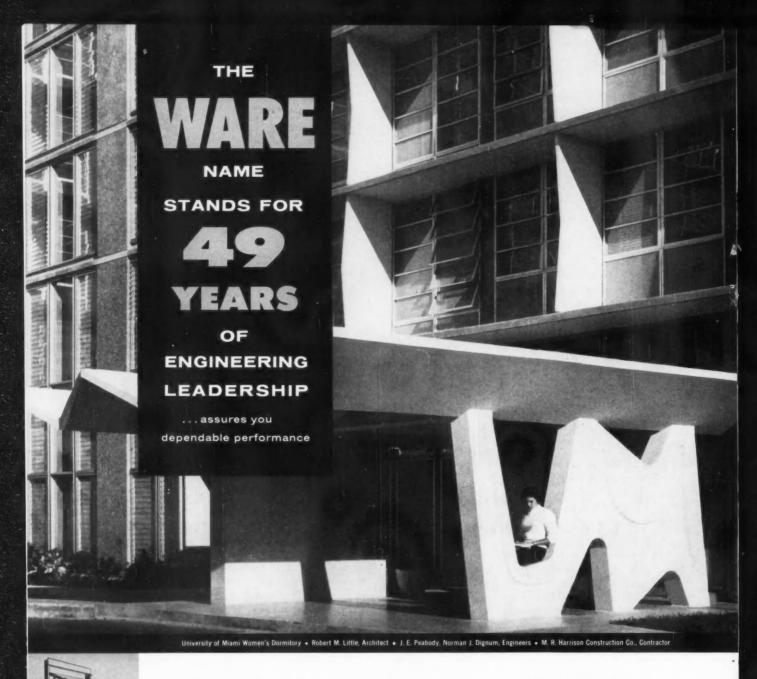


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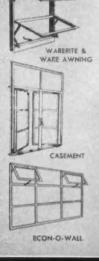


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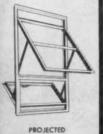
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THE RECORD REPORTS Perspectives

"This Is Design"

"It is the process," says the initial prospectus of the American Institute of Architects on the 1959 annual convention in New Orleans June 22-26, "which distinguishes architecture from construction, the bridge between art and the satisfaction of human needs, the substance which breathes life into shelter and transforms a tribe into a civilization."

-And This Is Architecture?

A new publication called Actual Specifying Engineer has defined as one of its objectives "to eliminate the junior status of engineers compared to architects." Calling "the present subordination of engineers, as expressed in law and trade practice, both "unrealistic" and "inequitable." the magazine offers this remarkable explanation for its position: "There is no reason for subordination beyond the historical. When structures were shelter and little more, the architect's contribution was obviously paramount. But today a building is an operating organism. The structure-after due regard for its beauty, stability and spatial arrangements-is merely an enclosure for the machinery which makes it operate. The engineer is the mastermind behind the machinery which makes the building work and fulfill its function. The architect designs once and is done. The engineer's responsibility continues insistently during the life of the building. The scope of exact knowledge needed by the engineer is far greater than that of the architect. His contribution to the operation of a building, its economics and even its safety, is far greater. If comparisons must be made, we place the engineer foremest. To do otherwise would be to accord the package more importance than its contents." Oh!

A Matter of Vision

"Persons who really understand the peculiar nature of an architect's work are not numerous," observes Dean Walter Gordon of the University of Oregon's School of Architecture and Allied Arts in an article on the work of Pietro Belluschi in the Fall-Winter issue of Northwest Review. "Architecture includes design in the broadest sense—the design of structures which satisfy practical functional requirements-and at the same time involves the art of designing details, as well as entire environments, which appeal to the spirit. Everywhere along the line in this complex profession today the architect finds traps set for him. The special nature of architecture as an art form is its need for the work and money of many others in order to get realized. The architect must at the beginning cope with the client, nearly always a person or a group of limited vision, if not downright irrational. He must face the peculiarities of the building industry, especially the realities of mediocre craftsmanship and inflated building costs. He must then conceive his designs in a general climate of indifference to art values, knowing all the while that his building, more often than not, will be constructed in an unsuitable setting, which in the modern city is usually characterized by commercial shabbiness and aggressive vulgarity." But, as Belluschi himself has said-and as quoted at the beginning of Dean Gordon's article-"We architects, of the common working variety, who must be frontline men, facing frustration and compromise; we, who must understand, absorb and give visual form to so many of the forces which make our world move, must not be ashamed to listen to nor to understand what lives around us, ever mindful that each one of us can give more in a creative way by being part of the great mass of people, sharing their loves and enthusiasms, guiding them in the realization of their obscure ideals-not disdainful, temperamental stars-but men of vision among men. . . .

Commerce Wants Architecture

The finest location in the world deserves the finest building in the world, said Erwin S. Wolfson at the press conference announcing the

new scheme for Grand Central City (see page 10). In testimony whereof, Mr. Wolfson said later in response to questions, he wants his octagonal tower even though its 2,400,000 sq ft of floor area is some 600,000 sq ft under that provided by the earlier scheme it replaces. Perhaps this site deserves not to have a skyscraper at all, but that is another story and now only a fairy story. As it is, the development of the design for the world's largest commercial office structure by Walter Gropius and Pietro Belluschi as consultants with Richard Roth of Emery Roth and Sons constitutes a milestone in the history of commercial office buildings in New York: a signal reaching toward architecture.

Art and the Observer

A native of Sardinia named Costantino Nivola last year returned to his native land for what he has called the most important artistic show of his career. He built his sculptures in the streets of his native town (see cut) and he said in a broadcast introducing the exhibit: "Art was imitation of nature. . . What I discover and attempt to achieve in my sculptures and basreliefs is a plastic unity harmonious and expressive, capable of evoking in the observer his own images and experiences, so as to solicit, in his sensitiveness, the same sensation which I experienced in spotting in everyday observation the presence of



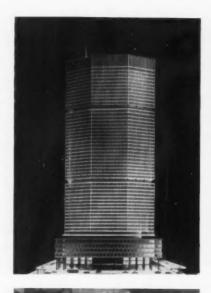
Buildings in the News

Gropius-Belluschi-Roth Design For Grand Central City

A 55-story octagonal tower of metal, masonry and glass, to cost \$100 million and provide about 2,400,000 sq ft of area for "the world's largest commercial office structure," was unveiled last month as the "final plan" for Grand Central City, to be erected on a three-acre site adjoining Grand Central Terminal in mid-Manhattan by a group consisting of Erwin S. Wolfson, chairman of the board of Diesel Construction Company; Herbert Scheftel; Stuart Scheftel; and Alfred G. Burger. The new scheme was developed by Walter Gropius and Pietro Belluschi, as design consultants, and Richard Roth of Emery Roth and Sons, architects.



 Present view up Park Avenue, Grand Central Terminal in foreground, turreted New York Central Office Building in distance.
 Rendering of "Grand Central City" as first proposed (AR, July 1958,





page 13) by Wolfson-Scheftel-Burger group last year; Emery Roth and Sons, Architects. 3. Rendering of the present Gropius-Bell uschi-Roth scheme. 4. Looking up Park Avenue toward Grand Central Terminal and





its new neighbor. 5. Looking down Park Avenue toward New York Central Office Building, carefully framed, now, by new design. 6. View from Forty-fifth Street east toward the side of the proposed tower







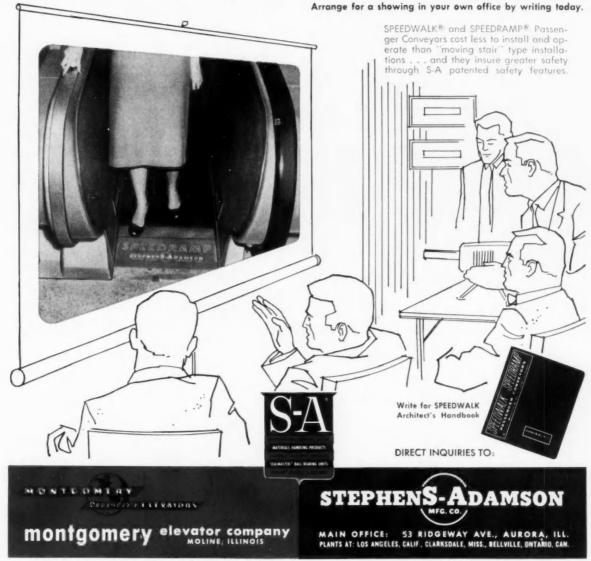
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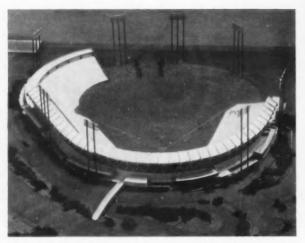
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Buildings in the News



Above: Due to be completed soon is the San Francisco Giants Stadium, a municipal structure to serve as the baseball team's home field, but adaptable also for football, pageants, etc. The first major league stadium entirely of reinforced concrete, it is on a 77-acre site; it seats 45,000 and includes parking for 12,000 cars. Cost: about \$11 million. There are three levels, with a concrete shell baffle behind the top row of seats for wind protection. John S. Bolles, architect, and E. Elmore Hutchison, engineer, in association; Charles L. Harney, Inc., general contractor. Below: Construction recently began on the Mark C. Steinberg Hall of Art and Archaeology, Washington University, St. Louis. Thin folded plate concrete is being used for the \$650,000 building, which has 50-ft spans between columns and a 20-ft cantilever in two directions. Fumiliko Maki, designer of structure; Russell, Mullgardt, Schwarz & Van Hoefen, architects; G. L. Tarlton Contracting Co., general contractor



Below: The new ticket agency of Alitalia, Italy's national airline, was recently opened in the center "island" of the street-floor arcade of 666 Fifth Avenue in New York (Alitalia's North American headquarters are on the 32nd floor). Gio Ponti designed the office and the furniture and commissioned various Italian artisans to design and make the ceramics and art objects; all major components of the room were manufactured and assembled in Italy. The 27-by-50-ft space contains four three-dimensional ceramic columns; the floor and walls are also in ceramics. An "undulating" ceramic rear wall conceals closets and storage. Pale blue, symbolizing the sky.



Above: The first new hotel in New York since 1931 will be The Zeckendorf. Completion is scheduled for 1961 on the 2000-room, 48-story structure, which includes six floors of office space above lobby and banquet facilities. The 10th floor contains mechanical equipment, and guest rooms are from the 11th floor up; all rooms are on the tower periphery. There are 10 banquet halls (one, seating 3300, the largest in the U.S.) and 15 private dining rooms. The \$66-million building has about 1.7 million sq ft. Harrison & Abramovitz, architects; Edwards & Hjorth, structural engineers; Jaros, Baum & Bolles, mechanical engineers; George A. Fuller Co., general contractor. Below: The six-story Quincy City Hospital in Massachusetts is under construction. Its cost is \$2,250,000. The structural frame and sunshade overhangs are reinforced concrete. Cooling and ventilating equipment are in the penthouse. Coletti Brothers, architects; John Capobianco Co., general contractor



is the predominating color; darker blues are also used. The ceiling consists entirely of frosted glass panels covering 200 yds of daylight type fluorescent lights. There also are incandescent lights on the columns. Furniture, desks, chairs, and couches are made of peroxide-bleached white ash. The desks and chairs replace conventional ticket counters. The walls under the windows are lined with low shelving, also white ash, which hides radiators and serves as a base for hand-wrought art objects. The photo at right shows a wall detail. Gio Ponti, architect; Freidin, Studley Associates, associated architects; Jacob Kotler Co., general contractor







American Airlines' \$14-million air terminal at New York International Airport is due to be completed late this year. It features a stained-glass wall 317 ft long and 22½ ft high along its front; the wall, designed by Robert Sowers in three types of glass, is in an abstract design intended to suggest

space. The overhead view, below left, shows how airplanes are to be brought to passengers, rather than vice versa. Below right is a detailed diagram: passengers may enter an aircraft at either A or B through enclosed corridors extending from a lounge and fitting around the plane's doors. Just

before departure, the rear corridor is contracted and pivoted clear to C; the front corridor may be left in position until the last minute. The terminal provides one-level routing from entrance to airplane cabin. Kahn & Jacobs, architects; Turner Construction Co., general contractor





In Warwick, R. I., it was decided to build as quickly as possible 58 elementary school classrooms with an appropriation of \$800,000 (exclusive of land and site development). The work, completed last fall, con-

sists of three new eight-room schools, one six-room addition to an older school, and seven four-room additions. Low bids were close to \$10 per sq ft, and costs worked out to \$18,000 per classroom for the new

schools and \$12,000 per classroom for the additions. Classrooms are 864 sq ft each, and the new schools also each have a 60by-36-ft all-purpose room, principal's and clerk's offices, sick room, teachers' loungelibrary, and storage. One of the typical new schools is shown in these three photographs. All new schools and additions are one-story buildings with slab floor, gasfired furnaces, cavity wall construction with brick for the additions and cement blocks for the new schools, acoustical ceilings, tar and gravel roofs with glass bubbles. Each classroom has a sink, and some additions include new toilets. All are built on a 12-ft module, MacConnell & Walker, architects; Kargman, Mitchell & Sargent, educational consultants; O. Ahlborg & Sons, general contractor







Buildings in the News



Honor Award: Northside Bank, Tampa (AR, Feb. '59, pp. 182-3). Pullara, Bowen & Watson, architects; Ranon & Jimenez, general contractor



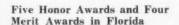
Honor Award: Seven Houses for Laurel Grove, Jacksonville (one is shown). Robert C. Broward, architect; Hall Enterprises, Inc., builder and developer



Honor Award: Remodeling, Central Nat'l Bank, Jacksonville. Edwin T. Reeder Assocs., architects; H. J. High Const. Co., contrac.



Honor Award: Ewing House, Coconut Grove. Alfred Browning Parker, architect; Albert Hallquist, general contractor



The annual honor awards program of the Florida Association of Architects was held during the 44th annual meeting (AR, Jan. '59, p. 25).

There were about 40 entries, divided into five categories: residential, commercial, institutional, remodeling, merchant builder. Nine, shown on this page, were honored.

shown on this page, were honored.
The jury consisted of John Noble
Richards, A.I.A. president; Leon
Chatelain, Jr., immediate past A.I.A.
president; Philip Will, Jr., A.I.A.
first vice president.



Honor Award: Warm Mineral Springs Inn, Venice. Victor A. Lundy, architect; Spear, Inc., general contractor





Merit Awards: Above, left: Starnes House, Miami. Starnes & Rentscher, architects; Albert Hallquist, general contractor. Above: Alliance Machine Company, Coconut Grove: Alfred Browning Parker, architect; Avant Construction Co., general contractor. Left: Sigma Phi Epsilon Fraternity House, Gainesville. Smith & Korach, architects; Kirkpatrick & Pierson, general contractor. Right: No. 1 Davis Medical Building, Tampa. Mark Hampton, architect; Russello & Barker, structural engineers; Charles T. Healy, mechanical engineer; DeWitt, Furnell & Spicer, Inc., general contractor







Grand Award: McInerny Store, Waikiki. Vladimir Ossipoff, architect; Walker-Moody Construction Co., general contractor



Grand Award: Ossipoff House. Vladimir Ossipoff, architect; Shuji Miura, general contractor



Honor Award: Kilauea Catholic Church, Kauai. John H. McAuliffe, Jr., and Edwin L. Bauer, architects; Kaoru Kato, contractor



Honor Award: C. S. Wo Building. Merrill, Simms & Roehrig, architects; Walker-Moody Construction Co., general contractor



Honor Award: Perkins House. Johnson & Perkins, architects; Harry Yamane, general contractor





Above: Honorable Mention: Wesley Foundation Student Center and Chapel, next to University of Hawaii campus. Lemmon, Freeth, Haines & Jones, architects; Harry Kobayashi, general contractor. Left: Ciro's Merry Monarch restaurant, Waikiki, last building of the late Philip C. Fisk, who received a special posthumous award for it. The name plates and other decorations of the building were designed by Edward Malcolm Brownlee, recipient of a special award for artistic contributions to architecture

Six Awards and Two Special Awards Given in Hawaii

The 1958 honor awards of the Hawaii Chapter, American Institute of Architects, were presented at a meeting recently. New officers were also installed (see photo, p. 28).

The two grand awards both went to Vladimir Ossipoff. There also were three honor awards and an honorable mention. In addition, a special award went to the late Philip C. Fisk in posthumous recognition. A special award was made to Edward Malcolm Brownlee, sculptor, for his artistic contributions to local architecture.

The jury consisted of Alfred Preis, Richard N. Dennis, and Albin Kubala.

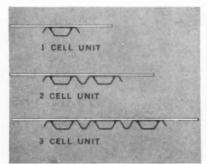


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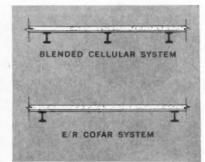
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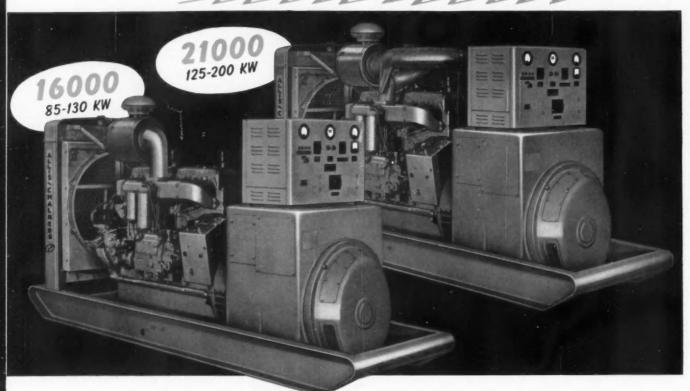
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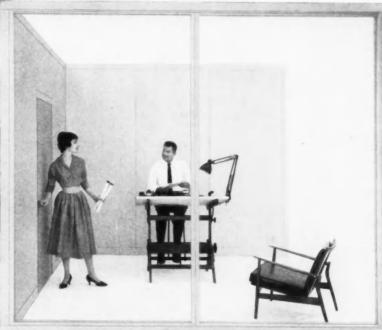
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News of Architecture Abroad

PROGRESS REPORT: COVENTRY CONTINUES TO REBUILD

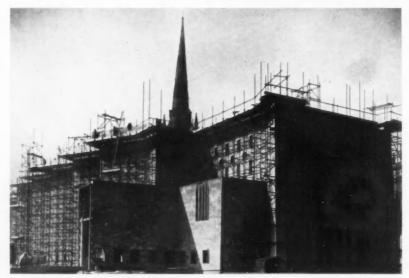


A phoenix rising from its ashes is incised on a stone set in the pavement at the head of Coventry's main shopping precinct. Certainly nothing could more effectively symbolize the story of this city's remarkable recovery since the war. An important center of English heavy industry, Coventry was exceptionally heavily blitzed in 1940. Of the 975 buildings in the central area all but 31 were damaged or destroyed, including the Cathedral, which was gutted when incendiary bombs lodged within the timber roof.

The design that won the competition for the new cathedral (AR, March 1954, pages 143-151) typifies the spirit in which all the reconstruction has been carried out. The architect, Basil Spence, has elected to preserve the walls and spire of the gutted church just as they were when the debris was cleared away. They will form the forecourt of the new building now rising in what used to be the churchyard. In this way the past has been respected, but so has the necessity to make no compromise with the present.

It is hoped that the new cathedral will be completed in time for a festival of Coventry in 1962. By that time the upper shopping precinct, which was opened four years ago, will have been joined to the lower precinct, the first units of which are now nearing completion. A handsome 910-seat legitimate theater and a new retail market were both completed within the past year. In addition, by 1962 Coventry will possess a new campus for its new College of Art, a new museum, and much of a system of ring roads designed to isolate the center from through traffic. The plans of city architect Donald Gibson and his successor Arthur Ling will have come to fruition, and Coventry will have risen from its ashes a far more important trade and cultural center than it ever was before.

-Jonathan Barnett





1. The main shopping precinct of Coventry looking toward the spire of the gutted cathedral. 2. and 3. Construction photographs of the new Coventry Cathedral, Basil Spence, architect, showing its relationship to the spire of the old church. Begun in 1956, the building is scheduled for completion in 1962. 4. Part of the newly completed retail market with parking for 213 cars on roof. Clock tower in background is on reconstructed factory



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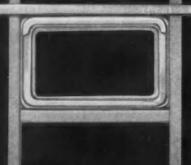
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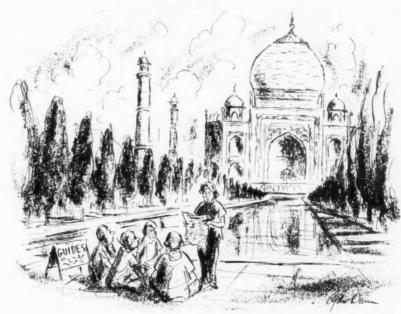


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Meetings and Miscellany



- Drawn for the RECORD by Alan Dunn

"This is the end for us, boys the tourists go to Ed Stone's 'Taj Maria' now "

Design is the Theme

The theme of this year's annual convention of the American Institute of Architects will be "Design." The meeting is to be in New Orleans, June 22-26.

One panel on design in general is to be moderated by Philip Johnson, with Edward D. Stone, William L. Pereira, Minoru Yamasaki, and Charles E. Pratt (of Vancouver) participating.

Robert Anshen is to be moderator of a panel on design factors and resources during which Lovic P. Harrington will talk on temperature, Julian E. Guarnsey on color, and Stanley McCandless on light.

The economic value of design is to be the subject of a panel with Morris Ketchum as moderator. Participants are to include Edward Drew of Lever Brothers and Graham Morgan of U. S. Gypsum.

The jury for the 1959 Annual Honor Awards Program, which will meet in Washington, D. C., March 30-April 1, will consist of Walter Gordon, Vincent G. Kling, and Harry Weese.

Danforth Succeeds Mies

George Edson Danforth has been appointed professor and chairman of the department of architecture at Illinois Institute of Technology. The appointment, effective September 1, 1959, was announced last month by Dr. John T. Rettaliata, I.I.T.'s president.

Mr. Danforth, now professor and chairman of the department of architecture at Western Reserve University, succeeds Ludwig Mies van der Rohe, who headed I.I.T.'s architectural school from 1938 until his retirement last September.

Mr. Danforth received his degree in architecture in 1940 from Armour Institute of Technology, a predecessor of I.I.T. He did graduate work until 1943 with Mies and in city planning and esthetics. From 1941 to 1953 he was an instructor, administrative assistant to Mies, and later assistant professor at I.I.T. He went to Western Reserve as chairman in 1953. He is a member of the American Institute of Architects and is a licensed architect in Ohio and Illingia.

Who's Who

HERMON S. BRODRICK, recently elected president of the Architects Society of Ohio. Others elected were: HAROLD W. GOETZ, first vice president; GILBERT CODDINGTON, second vice president; HOWARD B. CAIN, third vice president; FRANK E. POSELER, secretary; H. JAMES HOLROYD, treasurer. Mr. Brodrick is a partner in Walker, Norwick & Associates, Dayton.

ALBERT W. HILGERS, new president of the Oregon Chapter, A.I.A. Other new officers are: ROBERT C. DOUGLAS, vice president; EVERETT B. FRANKS, secretary; JOHN W. FOSTER, treasurer; NORMAN

C. ZIMMER and JOSEPH J. RUDD, directors. Continuing in office are: JOHN K. DUKEHART, past president; DONALD W. EDMUNDSON and DANIEL McGOODWIN, directors.

H. I. FELDMAN, re-elected president of the New York Society of Architects. Also re-elected were; NATHAN R. GINSBURG, vice president; JOHN JOSEPH CARROLL, secretary; JOHN N. LINN, treasurer.

ARTHUR F. SCHWARZ, re-elected as chairman of the St. Louis City Plan Commission. Mr. Schwarz, a partner in Russell-Mullgardt-Schwarz-Van Hoefen, is a former president of the A.I.A.'s St. Louis Chapter.

ENOCH R. NEEDLES, re-elected president of the Engineers Joint Council for 1959, AUGUSTUS B. KINZEL was elected vice president.

GEORGE S. RICHARDSON, elected president of the American Institute of Consulting Engineers. Mr. Richardson is senior partner of Richardson, Gordon & Associates, Pittsburgh.

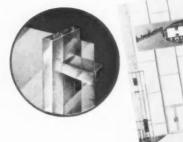
HAROLD A. MOSHER, nominated for president of the National Society of Professional Engineers for the 1959-60 year.

Honors

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Meetings and Miscellany

gateway of welcome to our nation"
—New York International Airport.
The award was presented on the first anniversary of the opening of the International Arrival and Airline Wing Buildings (Skidmore, Owings & Merrill, architects). Wallace K. Harrison is architectural consultant for Terminal City.

SECOND ANNUAL GREGORY AWARD to John Clifford Chapman of London, since 1948 a member of the Civil Engineering faculty, Imperial College of Science and Technology, The \$1500 award, sponsored by Gregory Industries, Inc., Toledo, was presented to Dr. Chapman for his use of stud welding for vibrating wire strain gauges for long-term analysis of stresses on a multi-story steel-frame structure.

ARNOLD W. BRUNNER SCHOL-ARSHIP of the New York chapter, A.I.A., to G. E. Kidder Smith, who will use the \$2400 award to compile a pocket-size guide to European contemporary architecture.

GEORGE G. BOOTH TRAVEL-ING FELLOWSHIP IN ARCHI-TECTURE for 1958 (\$1500) to Rudolph Horowitz, B. Arch., University of Michigan, '58, awarded by the university's department of architecture. Mr. Horowitz, now employed by Skidmore, Owings & Merrill, New York, plans to study architectural finishes in concrete in Europe.

Worth the Winning

STEEL HIGHWAY BRIDGE DE-SIGN COMPETITION sponsored by the American Bridge Division, U. S. Steel Corporation. Awards totaling \$44,000 will be made in the professional and student categories. Entries are due by May 31. Rules from: Steel Highway Bridge Design Competition, American Institute of Steel Construction, Inc., 101 Park Ave., New York 17.

FLINTKOTE CARLOAD CONTEST open to architects and others connected with building. The problem is to guess the total shipping weight of a number of the products shown on a flatcar in advertisements in Life, Saturday Evening Post, and professional magazines (AR, March 1959, pages 102-3). The grand prize

consists of the products illustrated or equivalent products or their \$5000 cash value; there are 121 other cash awards. Entries must be postmarked by April 15 and sent to Flintkote Carload Contest, Box 7a, Mount Vernon 10, N. Y.

Architects Cited at N.A.H.B.

Merchandising and legislative matters were as usual the chief concern of the 30,000 attending the 15th annual convention of the National Association of Home Builders, January 18-22 in Chicago. Carl Mitnick of Merchantville, N. J., succeeded Nels G. Severin of San Diego as N.A.H.B. president. There were 990 exhibits of building products in some 69 categories; and the convention theme "Opportunities Unlimited" got one pleasant definition in the official N.A.H.B. expectation—as expressed by Executive Director John M. Dickerman—of a five per cent increase in housing starts in 1959 "providedand this is mighty important-mortgage money is available at reasonable terms." Architects were noticed chiefly as the designers of projects for which builders received various awards at the convention. To wit:

Merit Awards in contest sponsored by N.A.H.B. Journal of Home Building and N.A.H.B. Construction Department-(three awards three entries) Builder Edmund J. Bennett, Bethesda, Md., and Keyes, Lethbridge and Condon, Washington, D. C.; Oak Hill Builders Inc., Red Bank, N. J., and Harsen, Johns and Kobayashi, Red Bank, architects; Builder John F. Long, Phoenix, and Architect Malcolm M. Mc-Pherson, Phoenix; Builder Lincoln Lumber Co., Oakland, Cal., and Architect David B. Whittet, Oakland; Builder Ross Corteso, Los Alamitos, Cal., and Architects Chris Choate and Robert G. Jones, Los Angeles.

Neighborhood Development Merit Awards Competition—Laurel Park, Bloomfield, Conn., Green Acres Inc., builder, Charles A. Currier, land planner, Irving Rutherford, architect; Oak Hill, Middletown, N. J., Oak Hill Builders Inc., builder, Jacob Lefferts, land planner, N. Kobayashi of Harsen, Johns & Kobayashi, architect; Park Forrest, Dallas, Fox and Jacobs Construction Co., builder, Philips, Proctor, Bowers and Associates, land planner, Parker Folse, staff engineer, designer; Kingston Knolls, Tucson, Lusk Homes Inc., builder, Blanton and Cole, land planner, Design Department of Lusk, designer; Harundale Mall, Glen Burnie, Md., Community Research and Development, builder, Rogers, Taliaferro and Lamb, land planner and architect; Springfield, Va., Carr Inc., builder, and land planner, Marion L. Bagley, Harry Ormston and Richard Gomersall, architects.

Parents' Magazine's Ninth Annual Awards for the Best Homes for Families with Children (see AR, Dec. 1958, page 25).



New officers of the Hawaii chapter of the A.I.A. are, left to right, seated: Douglas Freeth, president; Frank S. Haines, vice president; Clifford F. Young, secretary; Gordon Bradley, treasurer; Howard L. Cook, director and past president; standing: Jack McAuliffe, Alfred Preis, directors



An "Inter-American Architectural Symposium," linking architects in Toledo and in Bogota, Colombia, by radio-telephone, was held on January 29, sponsored by Owens-Corning Fiberglas Corp. Principals at the Toledo end were, from left: architect Carl Koch, assistant professor of architecture, M.I.T., and visiting critic at Yale; Ieoh Ming Pei, New York architect; John Noble Richards, national president, A.I.A., who introduced the program; Alvaro Ortega, Colombian architect and visiting critic at Harvard; Leonard J. Currie, head of the department of architecture, Virginia Polytehnic Institute, who was moderator



"Day" (above) is one of two ceramic murals (the other is "Night") on the grounds of the new Paris headquarters of UNESCO (Breuer-Zehrfuss-Nervi). Joan Mirō, the Spanish artist, received the \$10,000 Guggenheim International Award 1958 for the murals, two free-standing walls almost 10 ft high. "Day" is over 49 ft long. Among Señor Mirō's other murals are those at the Terrace Plaza Hotel, Cincinnati

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New acoustical ceiling given two-hour fire rating by Underwriters' Laboratories

New Armstrong Acoustical Fire-Guard is the first two-hour acoustical ceiling tile. It eliminates the need for intermediate fire-stops—saves construction time—lowers building costs.

Take a good look at the floor-ceiling assembly on the opposite page. It can mean significant savings in both construction time and money in nearly every new commercial or institutional building in the country.

Underwriters' Laboratories, Inc., (in its report #4177-1) stated that this floor-ceiling assembly, utilizing Armstrong Acoustical Fire-Guard ceiling tile, "will afford two-hour fire protection against the passage of flame or dangerous transmission of heat." It also reported that this system, when tested, protected bare steel joists for a period exceeding six hours.

Saves money

Armstrong Acoustical Fire-Guard eliminates the need for costly intermediate fire-stops. Previously, it was necessary to (1) utilize reinforced concrete construction, or (2) spray steel structural members with an insulating material, or (3) suspend a lath and plaster fire-stop to which the acoustical ceiling tile could be applied.

Saves construction time

Armstrong Acoustical Fire-Guard is installed by a completely dry method. No costly delays are necessitated by "wet" operations. No extra moisture is introduced into the building.

Available in two designs

Armstrong Acoustical Fire-Guard is now available in two attractive perforated designs: Full Random and Classic.

Offers choice of construction

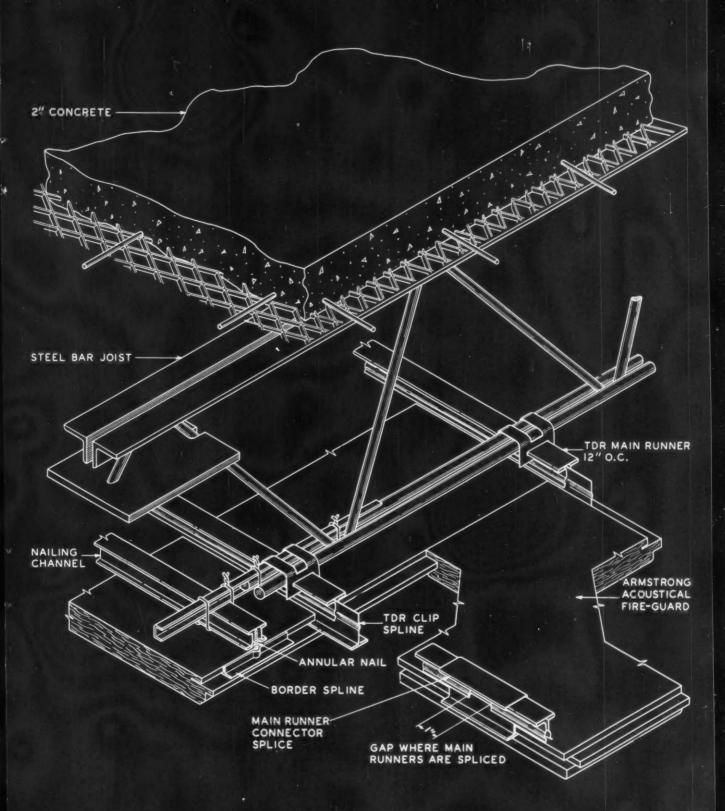
Assembly shown at right is minimum acceptable construction. Use of heavier steel joists or thicker concrete or suspension of the system from $1\frac{1}{2}$ " plasterer's channels hung below structural members would logically be permissible.

For complete information about Armstrong Acoustical Fire-Guard, call your Armstrong acoustical contractor, your nearest Armstrong district office, or write to Armstrong Cork Company, 4203 Rock Street, Lancaster, Pennsylvania.

Details of Armstrong Fire-Guard Suspension System on opposite page. The main runners are installed on 12" centers and are attached to the bar joists (or suitable carrying channels such as 1½" plasterer's channels) with galvanized clips placed at nominal 4" intervals. Clip splines are snapped into the main runners. The acoustical unit is supported on all four corners by the flange on one side of the tile and the kerf on the other side of the tile, resting on the snap-in clip spline. Border tiles are supported by annular nails which are inserted in border splines and fastened into nailing channels.



ARMSTRONG ACOUSTICAL FIRE-GUARD CEILING SYSTEM



C.S.I. Counts 3200 Members, Confirms New Executive

The Construction Specifications Institute learned at its January Board of Directors meeting in Chicago that approximately 3200 members were affiliated at that time, and that 36 chapters were organized and functioning, established and awaiting organization, or in the process of com-

pleting negotiations for organization. The report was made by Willard Barrows, New York City, chairman of the Chapter Development Committee.

A new charter was approved for the Winston-Salem chapter, and bylaws of the Denver chapter were referred to the bylaws committee with power to accept them if they did not conflict with the national bylaws and regulations.

Thus C.S.I. continues its phenomenal growth and continues to hold in view a 50-chapter organization with 5000 members.

Approval was given at the Chicago session of the executive committee action employing George Lamb as executive secretary, the first full-time executive officer for the Institute. Mr. Lamb in February opened new offices in Washington, D. C., from which the national affairs of the organization will be handled henceforth.

The following officers were nominated for the fiscal year 1959-1960 with election to be by mail ballot: president—J. Stewart Stein, Chicago; vice president (two nominations)—Willard H. Barrows, New York City, and Jack R. Lewis, San Diego; secretary-treasurer—Harry C. Plummer, Washington, D. C.; directors at large (two years)—James C. Bort, Chicago, and Terrell R. Harper, Dallas; director at large (one year)—Edwin T. Pairo, Washington, D. C. All but Mr. Harper are incumbents.

The Board voted to accept the invitation of San Francisco for the 1960 convention.

Preparations for the third annual convention to be held at the Palmer House, Chicago, May 4-6 this year were discussed in detail. A convention committee of approximately 100, headed by Warren Richardson of Chicago, has been at work on details for this third annual meeting for many months.

By unanimous vote, the Board awarded Fellowships posthumously to J. Norman Hunter, Los Angeles, who was C.S.I. president from June 1, 1956 until his death in May of 1958; and Ben John Small, a past president of the New York C.S.I. Memberships chapter. Honorary were voted for Dr. Goldwin Goldsmith, former head of the Department of Architecture, University of Texas; and for Clarence A. Graether, retired chief specification writer for Smith, Hinchman & Grylls, Detroit, and chapter member of the Detroit chapter of C.S.I.

-Ernest Mickel

more news on page 36

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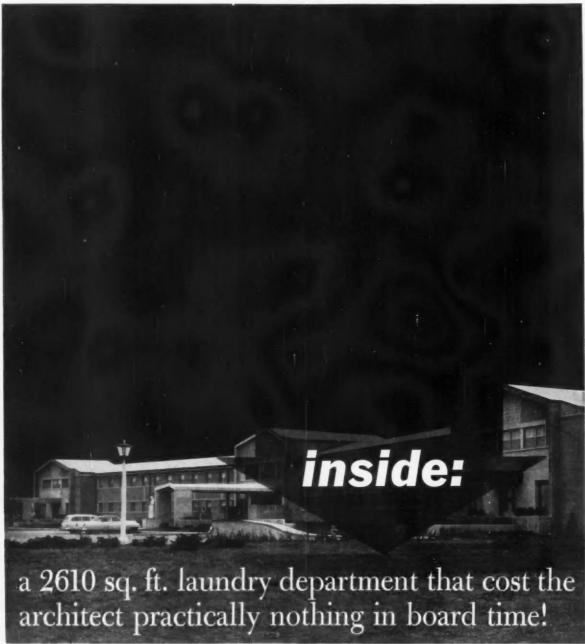
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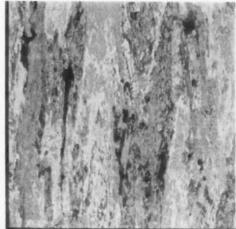
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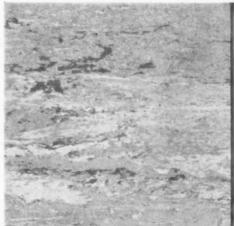
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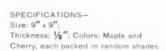


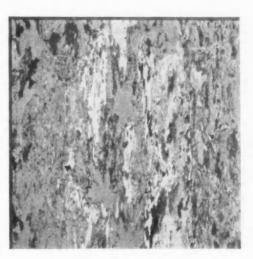
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Stress on Cooperative Effort at A.G.C. Annual Convention

"... The building industry is just emerging from the horse and buggy stage. We are bound to see radical new developments in building techniques, materials and methods. We must see greater efficiency and increased productivity. And just as with motor cars, the demand will increase as building gets better, cheaper, and more efficient."

The speaker was John Noble Richards, president of the American Institute of Architects, and the setting was the American Hotel in Bal Harbour, Fla., where the Associated General Contractors of America was holding its 40th annual convention, in January.

Mr. Richards told the contractors he felt the nation had made considerable progress in this direction in the past few years—progress due in good measure to the increasing harmony and cooperation between builder and architect. He dated much of the progress from June 4, 1958, the day of the first meeting of the Joint A.G.C.-A.I.A. Committee.

He urged the delegates to take more active interest in their local affairs and serve their communities directly. As businessmen, he told them, we are largely responsible for the community spirit which sets the tone for good living, for the housing, the schools, the churches, the transportation and community facilities.

The A.I.A. president was one of a number of convention speakers who touched on the good stemming from cooperation between industry groups and the need for more of this working together. The A.G.C., summing up its cooperation with other segments at the final session, estimated that work of its task units with government agencies alone had saved taxpayers millions of dollars through promoting more efficient and workable contract and specification procedures.

Labor relations continued to be one of the foremost problems before the generals. At last year's convention in Dallas a great deal of emphasis was placed on the need for a fair day's work for a fair day's pay. The contractors at that time insisted that the building trades eliminate non-productive wasteful practices.

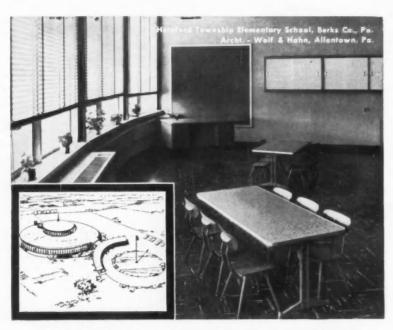
At Bal Harbour they reported an encouraging trend toward the solution of this problem. A large number of local chapters have understandings with their union groups, although the terms are not always written into working agreements.

Labor troubles of a different sort occupied the employers this year, however. Much time was spent in consideration of the increasing trend toward construction by industrial unions and so-called force account work rather than by the contract method. A.G.C.'s executive director, James D. Marshall, told Architectural Record that an estimated \$2 billion worth of construction has slipped away from the general contractors through this device over the past two years.

The condition is influenced in large measure by growing strife between the big industrial unions and the building and construction trades. This has been in evidence since the A.F.L.-C.I.O. merger.

So serious is the problem that the generals are banding together with the subcontractor and specialty con-

continued on page 40



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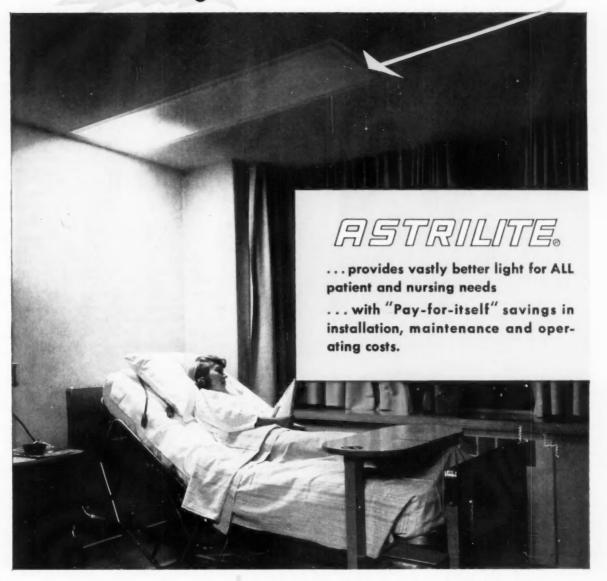








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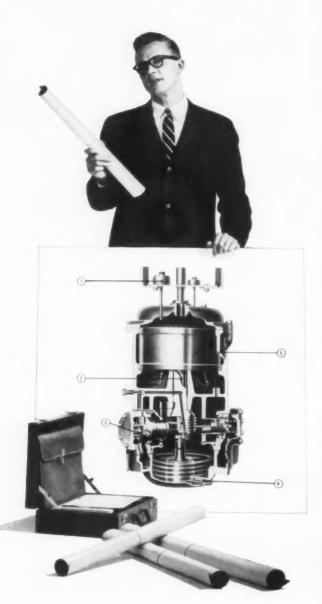
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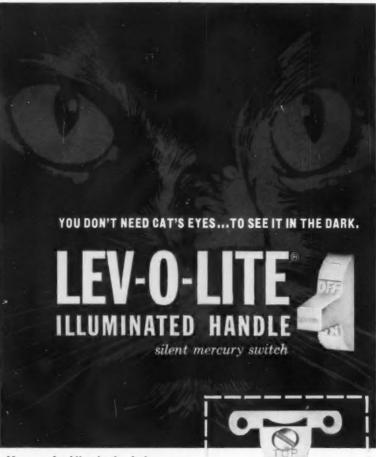
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The Record Reports

tractor groups and in cooperation with the building trades are forming a new joint conference to attack the matter.

In their resolutions this year, the A.G.C. took a solid stand against the outlay of any Federal funds for school construction. Fearing possible Federal control and increased construction cost, the delegates approved a statement opposing any additional Federal program for financing school building.

At the same time, they urged Congress to establish the Federal-aid airport program on a continuing basis and to encourage local governmental units to expedite improvements to needed airport facilities.

There was a resolution on firm material prices commending cement producers for giving a firm price for 1959 at no increase over 1958. It called the action one of the most significant steps taken toward combatting the inflationary spiral. The members also approved a statement urging Congress to provide funds for a continued orderly expansion of the highway construction program and to prevent any further diversion of trust funds for purposes other than highways.

James W. Cawdrey of Cawdrey and Vemo, Seattle, was installed as the new A.G.C. president, succeeding Fred W. Heldenfels, Jr., Heldenfels Brothers, Corpus Christi.

John A. Volpe, John A. Volpe Construction Co., Malden, Mass., was installed as vice president, succeeding Mr. Cawdrey. These officers were elected at the midyear session last year in Atlanta, Georgia.

Arthur S. Horner, A. S. Horner Construction Co., Denver, was named secretary-treasurer at the Bal Harbour meeting, succeeding William H. Muirhead of Durham, North Carolina, who had held the office for more than a decade, Mr. Horner is a form-

er A.G.C. president.

Details of a new disaster plan whereby equipment, personnel and technical knowledge will be made available in any disaster by the contractors to local agencies were announced at the 40th annual meeting. Relief organizations to carry out the aims already are being established. Known as "plan bulldozer," the program has been welcomed enthusiastically by Federal civil defense and other Federal officials, including the armed forces, the general contractors said.

-Ernest Mickel



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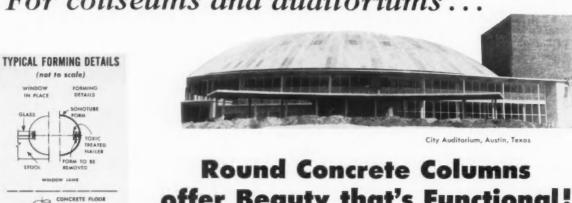


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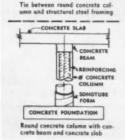
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A Washington Report by Ernest Mickel

MODULAR COORDINATION AND HOW IT'S DOING: SYMPOSIUM GETS REPORTS FROM USERS

New Modular Building Standards Association and S.C.P.I. Co-sponsor Washington Sessions for Federal Officials' Briefing

Better buildings at lower cost can result from general application of the modular measure principle, more than 100 government architects, engineers and administrators were told at a symposium held for them in Washington, D. C., in January.

Joint sponsors of the one-day session at the National Housing Center building were the Structural Clay Products Institute and the Modular Building Standards Association.

Familiar figures who have backed the modular dimensioning movement for many years were on the program-Harry B. Zackrison, chief, engineering division, military construction, Office of the Chief of Engineers; James E. Coombs, Baker & Coombs Construction Co., Morgantown, W. Va.; Cyrus E. Silling, F.A.I.A., C. E. Silling & Associates, Charleston, W. Va.; and Neill Boldrick, vice president of Acme Brick Company, Fort Worth, Texas. Other speakers included Harry C. Plummer, director, Engineering and Technology Department, Structural Clay Products Institute; Byron C. Bloomfield, executive director of the Modular Building Standards Association; and Stanley R. Kent, division of building research, National Research Council of Canada, Ot-

One in Ten Is Use Estimate

As symposium keynoter, Mr. Bloomfield said he had observed new optimism about the future of modular dimensioning since he became M.B.S.A.'s first executive director six months ago. He finds evidence of a willingness among many architects and others to evaluate the MM principle.

It is estimated by the association that one out of every ten projects going forward in the country today has been designed in modular, and the percentage is expected to grow rapidly. The assumption is being put to a test soon through more accurate measurement by job canvass.

It was revealed that M.B.S.A. is prepared now to give a registered trademark to material producers for their use in the identification of true modular materials in manufacturers' literature.

Professor Kent reviewed the Canadian effort in the modular measure field and told the Federal architects and engineers of the programs for this type of dimensioning carried forward in other countries.

An Architect's Testimony

It was Architect Silling who stressed the economy angle. "Modular Measure is your opportunity to provide better buildings at lower cost, meantime simplifying your own administrative problems," he told the government men. "It is the only system where architect, engineer, producer and contractor think alike to meet on common ground."

Mr. Silling, whose shop has done nothing but modular drawings for the past 10 years, said he has never found a manufacturer, supplier, or contractor unable to accommodate with first-class results. And, he adds, this has been done at what they say are alarmingly competitive prices.

As the Army Sees It

Savings to be realized through modular design and construction also were mentioned by Mr. Zackrison, whose Army Engineers have used the principle consistently and encouraged its broader use throughout the industry since late in 1946. He pointed out that \$10 billion worth of work has been directed by the Army Corps since Korea and that roughly half of the \$1.5 billion annual volume currently is building construction in which the modular method is employed.

Mr. Zackrison said he thinks of MM as being a standardization of individual products to permit close coordination of them with other products on a construction job.

"Too often the field solution of a problem by a builder's foreman is not of the best," he observed. "Often these solutions do not relate to the architect's desires." Then he argued that better resolution of detail through application of the modular principle could obviate the need for such field decisions and result in greater savings in construction generally.

And the Producers?

The material producer's view was outlined by Mr. Boldrick. After naming a number of large American material firms that advocate modular, he said: "From this imposing group of producers, it must be obvious that any item of construction is available and can be delivered to any location. With the continuing expansion of the use of the modular system, the economies of standardiza-

tion and of mass production can and will be channeled by our American system of competition into the pockets of our taxpayers and be realized in the form of more and larger projects for the use and benefit of the people who pay for them."

A Contractor Speaks

The contractor's view was presented by Mr. Coombs, who asserted that modular-designed buildings will attract more contractors to bid. This results from faster, easier, and far more accurate estimating, he believes. He made the point that modular eliminates the necessity of preliminary interpretation of each architect's own individual system.

Judging from his experience with the construction of both types of buildings-modular and non-modular-this contractor declared that modular economies apply "without question" to all types of buildings and all types of work in each building. Here were some specifics: sawing time and consumption of masonry cutting blades is reduced 55 to 60 per cent; squeezing and stretching of mortar joints is no longer necessary; layout time is reduced 35 to 40 per cent, and rate of actual bricklaying is increasedsavings on masonry labor alone, eight to 10 per cent. Mr. Coombs claimed that experience has shown that some savings can be made when modular drawings are used, even if non-modular materials are used.

Age of Application Here?

The history of the modular coordination movement was traced by Mr. Plummer, who divided it into four stages. The first, from 1938 to 1948, he termed the technical age, influenced primarily by the Modular Service Association. The second stage was described as that from 1948 to 1950 and was characterized as the "dark age," or transitional stage of modular dimensioning. The third, from 1950 to 1956, Mr. Plummer called the promotional stage. influenced primarily by the American Institute of Architects' then Secretary for Modular Coordination. William Demarest Jr.

Stage four was hopefully referred to as the application stage. That is the period now being entered, Mr. Plummer continued, with the hope that it will be influenced by the Modular Building Standards Association, established last September.



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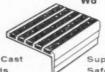
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Washington Topics by Ernest Mickel

School Aid Battle Looms as **HEW Finds Shortage Dip**

The stage appeared to be set for another Congressional battle over Federal aid to schools. Hearings on half a dozen different bills had already begun in the Senate Education subcommittee last month when the Administration sent its own proposed legislation to the Hill; and subcommittee chairman Senator James E. Murray (D-Mont.) had expressed "sincere regret" over the Administration's present attitude as he views

EXPANDED METAL

it: i.e., less eagerness for more aid.

As the subcommittee hearings opened, Senator Murray cited the latest figures from the Department of Health, Education and Welfare on public school enrollment, teachers and housing to support his contention that the nation's classroom shortage has not been substantially diminished. Preliminary from HEW's fifth annual survey covering the situation as of last fall showed enrollment 1,843,000 over normal classroom capacity of public

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elementary and secondary schools, compared with an excess enrollment of 1,943,000 a year earlier: 5.4 per cent of total enrollment compared with 5.9 per cent in fall 1957.

Mr. Murray recalled that the states reported a shortage of 159,000 classrooms in 1956, a year later a shortage of 142,300. And last fall the shortage was 140,500. So, he remarked, we gained only 1800 classrooms during the year, a mere 1.3 per cent of the national deficit.

HEW's preliminary figures from the new survey showed 71,600 new instruction rooms completed during the 1957-1958 school year with 17,-300 abandoned over the same period. The number of rooms available at the start of the school year last fall was 1,232,667.

Under the heading "additional classrooms needed," the states placed a total of 65,300 to accommodate excess enrollments, and another 75,200 to replace all unsatisfactory facilities

HEW now concludes that the need for instruction rooms stands at 140,-500 additional units on the basis of the state findings. The figure compares with 142,300 a year ago.

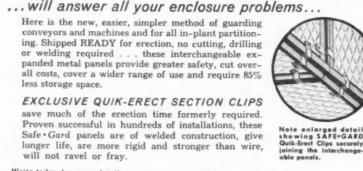
The number of instruction rooms scheduled for completion during the 1958-1959 school year was placed at 68,440 as against the 71,600 rooms actually completed during the 1957-1958 year and now occupied. In a previous annual survey, the states said that 70,500 rooms would be constructed in the 1957-1958 year, or 1100 fewer than the number actually completed.

Enrollment in the public schools increased 1,148,000 last fall over the previous year's total. The states reported approximately 33,936,000 pupils in the public schools, a 3.5 per cent increase for the year.

Administration Proposes Loans

The Administration program, which HEW Secretary Arthur Flemming estimated would provide from 70,000 to 75,000 new classrooms with an aggregate cost of \$3 billion over its proposed five-year span, bases its aid on loans undertaken by the school districts themselves. The Federal government would repay half the principal and interest charges on loans to school districts if the state involved agreed to pay the other half.

A ceiling of \$600 million in each of the five years on total cost of the elementary and high school construction is provided. The program could cost the government around \$85 million a year in long-term school bond payments, or as much as \$2.1 billion over a 25-year period, it was said. continued on page 346



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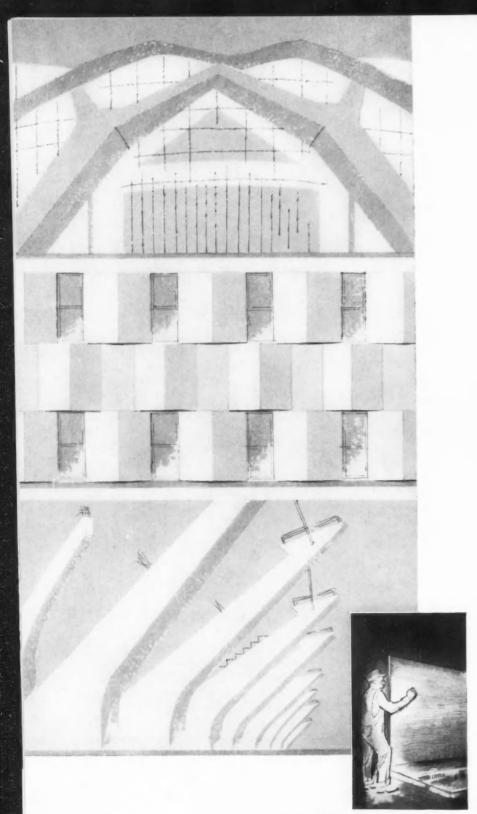
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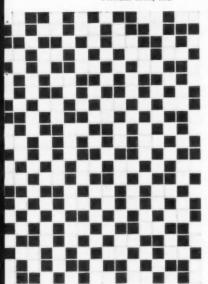
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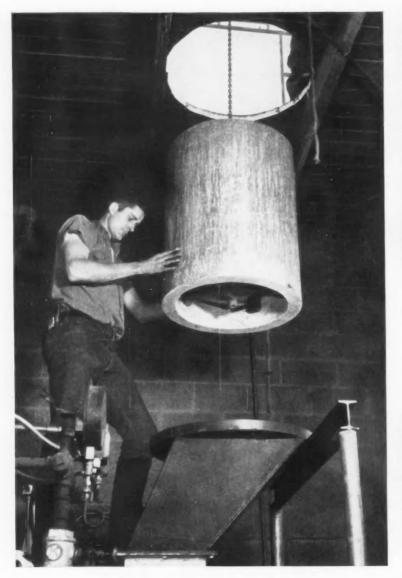
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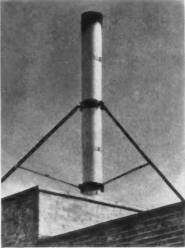
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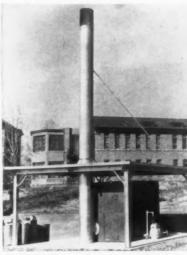


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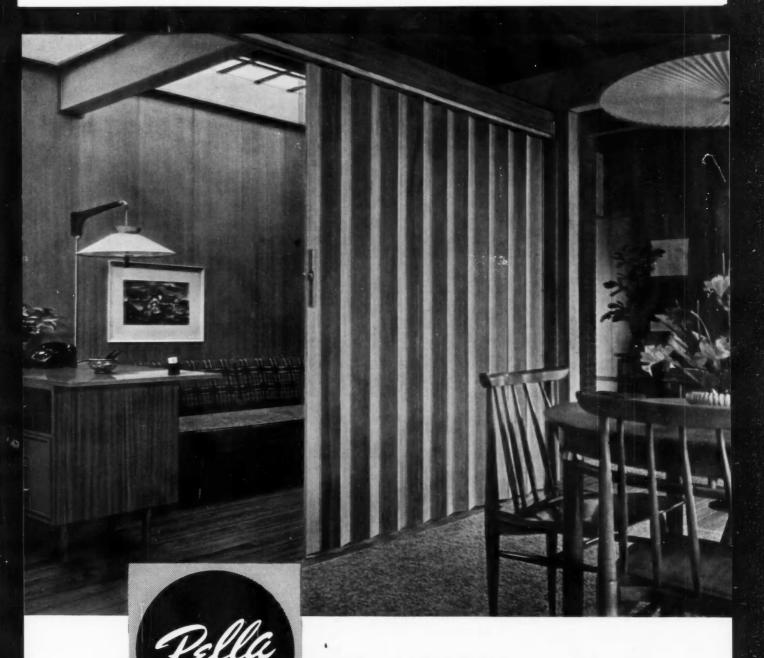
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Construction Cost Indexes

Presented by Clyde Shute, Director of Statistical Policy, Construction News Div., F. W. Dodge Corp., from data compiled by E. H. Boeckh & Assoc. Inc.

Labor and Materials: U.S. average 1926-1929=100

IEW	YORK	ATLANTA

	RESIDENTIAL		APTS., HOTELS, OFFICE BLDGS. Brick and	FACTORY BLDGS. Brick Brick and and		RESIDENTIAL		APTS., HOTELS, OFFICE BLDGS. Brick and	FACTORY BLDGS. Brick Brick and and	
PERIOD	Brick	Frame	Concrete	Concrete	Steel	Brick	Frame	Concrete	Concrete	Steel
1930	127.0	126.7	124.1	128.0	123.6	82.1	80.9	84.5	86.1	83.6
1935	93.8	91.3	104.7	108.5	105.5	72.3	67.9	84.0	87.1	85.1
1939	123.5	122.4	130.7	133.4	130.1	86.3	83.1	. 95.1	97.4	94.7
1946	181.8	182.4	177.2	179.0	174.8	148.1	149.2	136.8	136.4	135.1
1947	219.3	222.0	207.6	207.5	203.8	180.4	184.0	158.1	157.1	158.0
1948	250.1	251.6	239.4	242.2	235.6	199.2	202.5	178.8	178.8	178.8
1949	243.7	240.8	242.8	246.6	240.0	189.3	189.9	180.6	180.8	177.5
1950	256.2	254.5	249.5	251.5	248.0	194.3	196.2	185.4	183.7	185.0
1951	273.2	271.3	263.7	274.9	271.8	212.8	214.6	204.2	202.8	205.0
1952	278.2	274.8	271.9	265.2	262.2	218.8	221.0	212.8	210.1	214.3
1953	281.3	277.2	281.0	286.0	282.0	223.0	224.6	221.3	221.8	223.0
1954	285.0	278.2	293.0	300.6	295.4	219.6	219.1	233.5	225.2	225.4
1955	293.1	286.0	300.0	308.3	302.4	225.3	225.1	229.0	231.5	231.8
1956	310.8	302.2	320.1	328.6	324.5	237.2	235.7	241.7	244.4	246.4
1957	318.5	308.3	333.1	345.2	339.8	241.2	239.0	248.7	252.1	254.7
October 1958	335.9	321.5	358.7	378.2	367.5	246.5	242.0	259.3	265.9	265.1
November 1958	335.9	321.5	358.7	378.2	367.5	246.5	242.0	259.3	265.9	265.1
December 1958	335.9	321.5	358.7	378.2	367.5	246.5	242.0	260.2	266.4	266.8
December 1958	% increase over 1939 172.0 162.7 174.4 183.5 182.5				182.5	% increase over 1939 185.6 191.2 173.6 173.5 181.7				

		SAN FRANCISCO								
1930	108.9	108.3	112.4	115.3	111.3	90.8	86.8	100.6	104.9	100.4
1935	95.1	90.1	104.1	108.3	105.4	89.5	84.5	96.4	103.7	99.7
1939	110.2	107.0	118.7	119.8	119.0	105.6	99.3	117.4	121.9	116.5
1946	167.1	167.4	159.1	161.1	158.1	159.7	157.5	157.9	159.3	160.0
1947	202.4	203.8	183.9	184.2	184.0	193.1	191.6	183.7	186.8	186.9
1948	227.9	231.2	207.7	210.0	208.1	218.9	216.6	208.3	214.7	211.1
1949	221.4	220.7	212.8	215.7	213.6	213.0	207.1	214.0	219.8	216.1
1950	232.8	230.7	221.9	225.3	222.8	227.0	223.1	222.4	224.5	222.6
1951	252.0	248.3	238.5	240.9	239.0	245.2	240.4	239.6	243.1	243.1
1952	259.1	253.2	249.7	255.0	249.6	250.2	245.0	245.6	248.7	249.6
1953	263.4	256.4	259.0	267.0	259.2	255.2	257.2	256.6	261.0	259.7
1954	266.6	260.2	263.7	273.3	266.2	257.4	249.2	264.1	272.5	267.2
1955	273.3	266.5	272.2	281.3	276.5	268.0	259.0	275.0	284.4	279.6
1956	288.7	280.3	287.9	299.2	293.3	279.0	270.0	288.9	298.6	295.8
1957	292.0	283.4	295.2	307.1	302.9	286.3	274.4	302.9	315.2	310.7
October 1958	298.9	289.8	307.2	320.6	316.3	292.0	277.1	314.2	329.7	323.3
November 1958	298.9	289.8	307.2	320.6	316.3	292.0	277.1	315.1	330.2	325.0

Cost comparisons, as percentage differences, for any particular type of construction, are possible between localities, or periods of time within the same city, by dividing the difference between the two index numbers by one of them; i.e.:

299.1

171.4

290.0

171.0

307.7

% increase over 1939

159.2

December 1958

December 1958

index for city A = 110 index for city B = 95

(both indexes must be for the same type of construction).

Then: costs in A are approximately 16 per cent higher than in B.

316.5

166.0

292.9

177.4

278.0

321.4

168.3

$$\frac{110 - 95}{95} = 0.158$$

Conversely: costs in B are approximately 14 per cent lower than in A.

$$\frac{110 - 95}{110} = 0.136$$

Cost comparisons cannot be made between different types of construction because the index numbers for each type relate to a different U. S. average for 1926-29.

316.5

169.6

% increase over 1939

331.0

171.5

325.2

179.1

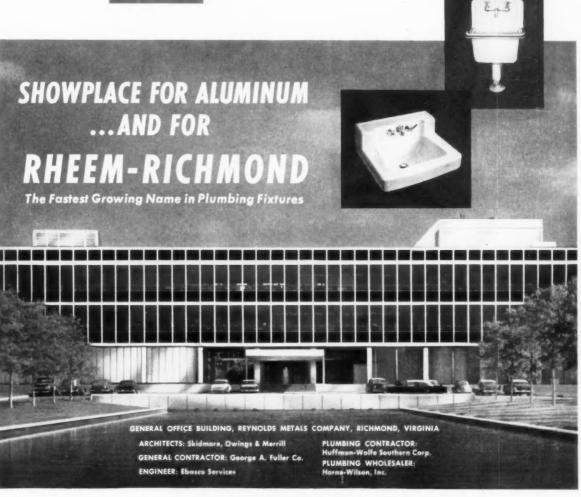
Material prices and wage rates used in the current indexes make no allowance for payments in excess of published list prices, thus indexes reflect minimum costs and not necessarily actual costs.



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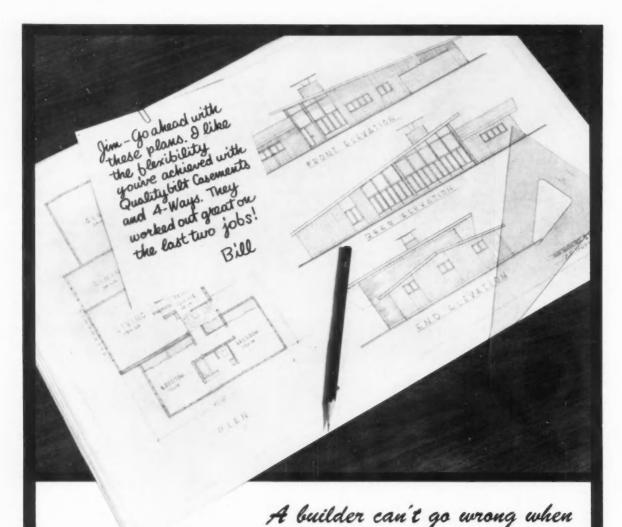






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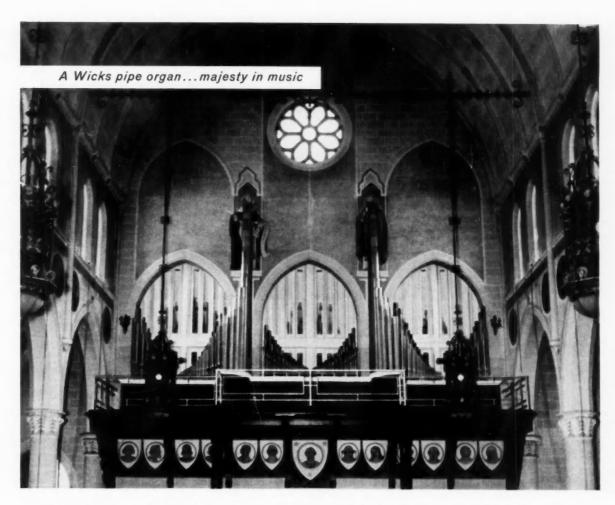
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Required Reading



Baroque: "... a taste for the grandiose is, once it has been fully acquired, difficult to keep within limits ..."

Lancaster Rides Again!

HERE, OF ALL PLACES. By Osbert Lancaster.
Illustrated by the Author. Houghton Mifflin
Co., 2 Park St., Boston 7. 189 pp. \$4.

BY GRACE M. ANDERSON

Much of Mr. Lancaster's latest book will be familiar to readers of his earlier Pillar to Post, or English Architecture without Tears; it is the same book, with parts of Homes Sweet Homes thrown in, and brought up to date and across the Atlantic by the addition of illustrations of American building, current and his-



Hudson River Bracketed: "... melancholy symbols of the thwarted hopes of an over-confident generation ..."

torical. The author is primarily a social commentator, and one who, as his readers know, seems to be as familiar with the social absurdities of history as he is with those of our times. Architectural absurdities, in Mr. Lancaster's context, are only a part of the whole. He is also a coiner of such phrases as "Bypass Variegated," a suburban architectural style similar, in spirit if not in appearance, to "Wimbledon Transitional" and "Homes on the Range."

For a definition of the purposes of the book, one cannot do better than to quote the author himself: "First, to do for buildings what so many popular writers have done for birds, to render them a source of informed interest and lively excitement for the passer-by so that his quiet satisfaction at having identified a nice



Spanish Super-Colonial: ".... down flights of balustraded stairs, Flaming Youth tottered to its doom ..."

bit of Banker's Georgian might equal that of the keen bird-watcher on having spotted a red-breasted flycatcher; second, and with no very sanguine hopes of achievement, that such an interest, once stimulated, might become so widespread as to cause inconvenience to speculative builders, borough surveyors, government departments and other notorious predators." All this will undoubtedly amuse the architect; but it may be more useful to his wife, his children or old friends who have for years been left on the outside looking in at cocktail parties and other functions where the profession meets to talk shop.

Three of the book's 91 drawings appear on this page.

Building Supervision Manual

FIELD INSPECTION OF BUILDING CONSTRUCTION. By Thomas H. McKaig. F. W. Dodge Corp., 119 W. 40th St., New York 18. 337 pp., illus. \$9.35.

This is the first book of its kind to be published on inspecting, testing, and supervising the construction of buildings. The practical material presented is designed for day-to-day use by architects, engineers, contractors, and field inspectors. It is not a textbook and does not delve into theory. Thomas H. McKaig is both architect and engineer and has for 35 years headed his own consulting firm in Buffalo. He is chairman of the New York State Board of Examiners for Professional Engineers and Land Surveyors. He is the author of Applied Structural Design of Buildings (also published by Dodge)

Mr. McKaig's presentation closely follows the sequence of work as it is normally met in building jobs and is of value in defining the responsibilities of each in the complicated owner-architect-engineer-contractor-subcontractor relationship. The first chapter discusses the field inspector's job. It covers coordinating work by the various trades, defines the thin line between over- and under-inspection, and treats the keeping of proper records.

In five subsequent chapters, Mr. McKaig describes the duties and responsibilities of the inspector at each stage of construction. These chapters give appropriate information for the preliminary, foundation, structural-framing, intermediate, and finishing stages. The last chapter is devoted entirely to concrete because of the many special problems involved in obtaining uniform, acceptable quality.

Sample documents and check lists are incorporated, and the appendixes include a list of 86 reference sources with addresses.

Wright on Cities

THE LIVING CITY. By Frank Lloyd Wright. Horizon Press, 220 W. 42nd St., New York 36, 224 pp., illus. \$7.50.

This book is, in part, a reworking and expansion of When Democracy Builds (1945), which in turn stemmed from The Disappearing City (1932). The present work elab-continued on page 63

How strong is the hinge?





CUTLER TOILET COMPARTMENTS

Critical point in toilet compartment construction is the hinge that bears the heaviest work load for the life of the compartment. That's why architects ask, "How strong is the hinge?"

ANSWER: In an unbiased laboratory loading test comparable to the way a door is used in service, the Cutler lower hinge proved to be 76% stronger than a leading competitor's type tested. Further evidence: in another test double the weight which would be used in normal

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CERAMIC TILE



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VICTOR GRUEN ASSOCIATES

Victor Gruen's plan for the Westchester Terminal Plaza in New Rochelle, New York, is a milestone in the efficient planning of urban space. This project, which is estimated to cost \$41,000,000, combines a number of uses on a comparatively small site. It will contain a 750,000 sq. ft. regional shopping center, a railroad station, an office building, a hotel, a bowling alley and other related facilities.

Ceramic tile will cover much of the building's exterior. Serving as a functional and beautiful facade, tile will combine gracefully with the other modern building materials: the cylindrical glass-enclosed elevator shafts on the side of the tower and the gold anodized aluminum sun grille protecting the 24-story office tower.

Any modern structure gains in appearance, prestige and decreased maintenance costs when ceramic tile surfaces are used . . . inside or out. Rugged, fireproof ceramic tile comes in over 200 different colors and a wide range of sizes—giving the architect the greatest design freedom possible.

The Modern Style is

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Design for Westchester Terminal Plaza by Victor Gruen Associates

The multiple benefits of ceramic tile will pay off handsomely for yourself and your client on any residential, institutional or commercial project you undertake. See your local tile contractor for up-to-date information—including all the details on the new lower-cost installation methods and the new dry-curing, thin-setting bed mortars.

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800 Second Avenue, New York 17, N. Y.; Room 933, 727 West Seventh St., Los Angeles 14, Calif.; Room 207, 5738 North Central Expressway, Dallas, Texas



Required Reading

Wright . . . cont. from page 60

orates Wright's views on centralization and the machine age, deplores the present plight of our cities, and condemns the policies that fashioned them.

The author's analysis of the social, political, and economic problems of our time is too familiar for comment here, and certainly the reader who already believes Wright's philosophy to be either inspiring or inane will not be swayed by any new revelations in *The Living City*. What is new and valuable in this work is the presentation, in dazzling detail, of a monumental project—Broadacre City—that perfectly delineates Wright's soaring architectural imagination and grasp of technique.

Beginning with a comprehensive plan (an eight-page foldout in color), the "living city" is revealed in sketches and drawings of houses, apartment-office buildings, schools, theaters, motels, service stations, markets, sports stadiums, highways —even vertical-body cars and radically designed helicopters.

Fifteen years ago, in An Autobiography, Wright said: "I wish to build a city for democracy: the Usonian city that is nowhere yet everywhere." Every architect will want to see it in this book.

—ARTHUR FISHER

Away From It All

TREE HOUSES. By Royal Barry Wills. Illustrated by the Author and Charles H. Crombie. Houghton Mifflin Co., 2 Park St., Boston 7, 67 pp. \$3,50.

During the early life of most American rural, non-farm males somewhere between the ages of marbles and girls, there arises an arboreal form of the "club" or "hideout" syndrome. Tree Houses evidently was written in the hope that this atavistic, or evolutionary, drive might result in something other than broken collarbones.

Many will remember that the author has as deft a touch with the pen as the flattened pencil. This book is written as if by a knowledgeable uncle to a respected nephew. It starts out with an anecdote about two young friends who put up a quite respectable tree house, only to have one of New England's wandering hurricanes almost destroy it. They rebuilt (and provided an example of how increasing maturity sometimes decreases fun) by adding a ground floor, then removing the tree from the inside. They finally rented it to a young couple.

continued on page 376



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Write for AE-458R, new folder with complete specification data.



ALSYNITE COMPANY OF AMERICA Dept. AR-3 - San Diego 9, California



Architects-Engineers: Skidmore Owings and Merrill; General Contractor: Dinwiddie Construction Co.; Steel Fabrication and Erection: Pacific Iron and Steel Corporation



High-strength bolts speed erection of new jet hangar by 6 weeks

United Air Lines' new jet service center at San Francisco International Airport is part of the airline's new facility for turnaround maintenance of the DC-8 jet transports scheduled to begin service this year.

The hangar accommodates four jet airliners with wing spans of 140 feet. These are housed under an unusual roof supported by seven 125-ton steel plate girders. These girders soar out in two directions in a spectacular 142-foot cantilever. Each girder measures 365 feet from tip to tip.

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ARCHITECTURAL RECORD

Western Section®

EDITOR: Elisabeth Kendall Thompson, A.I.A. 2877 Shasta Road, Berkeley 8, California

Freeways Go Home

A freeway is not necessarily a desirable adjunct to a city and it may not be, in all instances, even a necessary one, San Francisco's city fathers decided late in January when they struck out of their city's master plan the proposed routes for six state-planned superways. Far from being a tempest in a teapot, their rebellion against the tyranny of the automobile has since been underlined by a report to the governor that the city will "not allow freeways through its heart in the foreseeable future."

It was a courageous stand to take (a considerable sum of state money was involved), but it had the backing of 97 organizations which had appeared in hearings to denounce the effect of freeways on their city and to voice their concern that San Francisco get not just action but the best possible action, that it consider not just the factor of automobile movement but of all the city's problems.

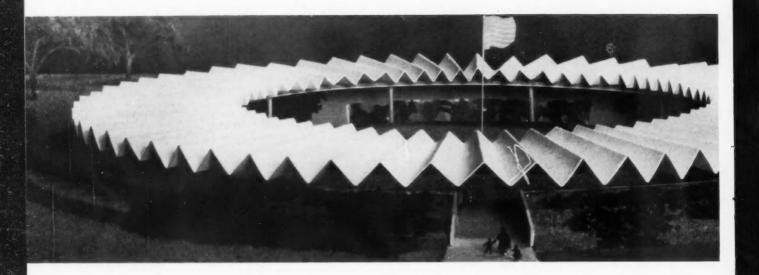
It was about time that someone said in a loud, strong, clear voice what needed to be said about freeways, trafficways, transit and automobiles. Yes, and about the rights of the people who live in cities. One could wish that this voice had been that of the architectural profession, speaking as it is so well fitted to do, of the human value which true planning must recognize.

What the San Francisco Supervisors had to say about freeways may come too late to save cities such as Seattle, midpoint on the Everett-Tacoma tollway, already under construction; or the Monterey peninsula where a complicated interchange is under construction on Carmel hill, and an incredible maze of roads, freeways, loops and interchanges is being proposed by the State of California at the junction of Highway 1 and the Salinas road. But other cities, as yet untouched by the shadow of these structures, can take heart: a freeway need not be a blight, though it will take imaginative thinking and skilled action to make it more than that.

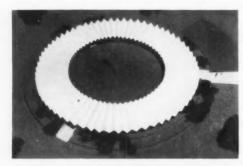
The ghost of the ill-fated struggle to prevent the construction of the two-story freeway along the Embarcadero in front of the Ferry Building may have haunted the Supervisors, for as they came to their decision the Embarcadero freeway was nearing completion and it was plain even to the least perceptive that this structure added nothing to the city's beauty. And when it was opened a week later it was obvious even to the most optimistic that it added nothing to its convenience, either, for it has created new traffic jams at its access points.

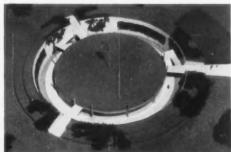
San Francisco's decision was not against all freeways; actually, it decided to keep two as previously routed. What it decided against was the willy-nilly routing of freeways through the city, tearing out its houses, uprooting its trees, making displaced persons of its citizens and replacing them with huge heartless structures, the nightmare contortions of multi-level interchanges and a long scar across the cityscape. What it decided for was consideration of the values of light and air, scale and environment—and beauty, though it did not say this in so many words.

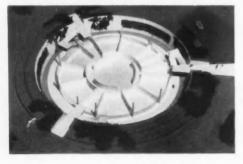
Here is a break-through toward the goal which is that of architects everywhere—an urban environment planned for delight as well as for function. How to have that and solve the problem of traffic—which no one, least of all San Francisco, denies—is a gauntlet thrown right at the feet of architects. They had better pick it up—or someone else will. E.K.T.



DELIGHT AND PROTECTION IN AN ELEMENTARY







This proposed elementary school combines the basic requirements of the school and of the radioactive fallout shelter but does so recognizing that delight is as great a human need as is shelter. Up to now civil defense buildings have stressed their protective quality at the expense of providing a pleasant environment for everyday use or have consisted of specially designed separate shelters for disaster use only.

Depending for fallout protection on concrete and earth—both offer, in appropriate thicknesses, excellent protection against radiation—this design has an openness which at first seems incongruent with shelter needs. But the earth berm on the perimeter and the 3-ft soil overlay on the post-stressed concrete roof of the classrooms provide adequate protection by civil defense standards against fallout. (Blast protection was not considered in the program for this design, a project of the Nuclear Energy Committee of the Northern California chapter, A.I.A.)

Nine classrooms surround the multi-purpose room, their glass walls opening onto a 10-ft walk, bordered at the retaining wall by an 8-ft pool which is not only pleasant and colorful with its mosaic murals but essential to the shelter function. After the radioactivity of fallout has subsided to safe levels, the ceramic tile retaining walls, ramps, walks, and classroom walls can be hosed down to remove all trace of radioactivity. Contaminated water will drain into the pool and be carried off for filtering and recirculation.

The earth-covered roof of the classrooms is intended for use as playground, accessible from the street by a bridge over the pool at the same level. Ramps lead from the bridge to the classroom level 14 ft below.

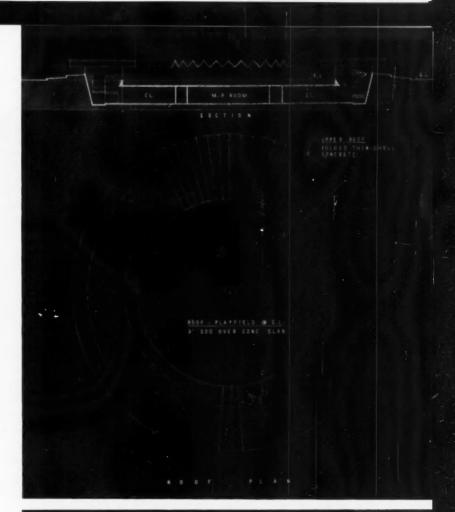
In a disaster, parents and other members of the community could join children and faculty since the building would act as a temporary mass-care center in emergencies.



SCHOOL SHELTER

Albert Sigal, Jr., Architect

Model by Virginia Green



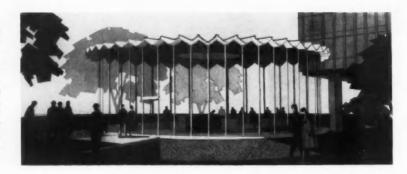




FURNITURE PLANT ON SUBURBAN SITE This new headquarters office and warehouse for Dux Incorporated, located near Burlingame, Calif., was designed to "provide an architectural environment which promotes interest in and fulfillment of daily endeavor." Offices are separate from factory but connected with it by two corridors which form a court. Factory walls are tilt-up concrete panels with exposed aggregate; structure uses steel columns and laminated wood beams. Knorr-Elliott Associates, designers

GLASS WALLED BANK IN PARK

The American Trust Company's newest branch bank will be this 70-foot diameter glass cylinder, capped by a precast concrete roof and set in a one-and-one third acre park beside Crown-Zellerbach's almost completed 21-story building in the center of downtown San Francisco. Walls are 40 panels of glass separated by slender steel columns which support outer ends of steel beams radiating from a central skylight. Skidmore, Owings & Merrill, architects

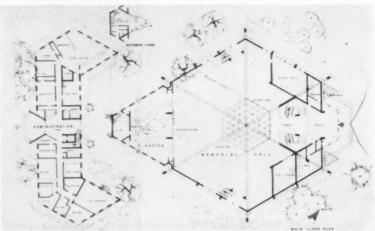


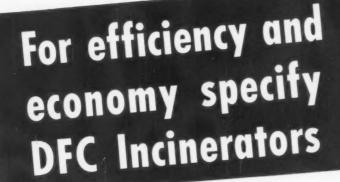
ILWU OPENS NEW HIRING HALL

Precast concrete arches with a clear span of 154 ft frame this hexagonal building which doubles as hiring hall and auditorium for San Francisco's Local 10 of the Longshoremen's Union. The triangular roof panels of precast concrete are sheathed in copper. A central skylight daylights the building. Adjacent is a two-story administration building. Henry Hill, architect; John W. Kruse, associate; Isadore Thompson, structural engineer; Royston, Hanamoto & Mayes, landscape architects







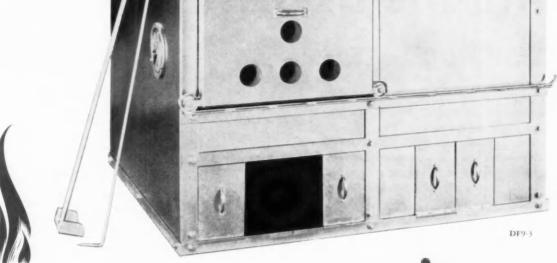


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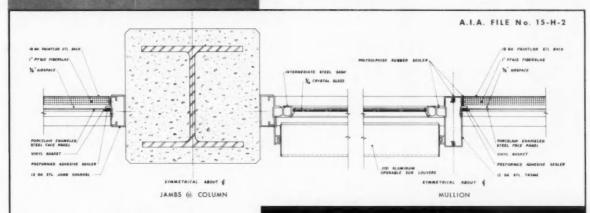
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skin deep



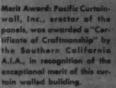
TYPICAL CURTAINWALL DETAILS

Architect: Charles Luckman Associates, William t. Per General Contractor: Vinnell Co., Inc., Alhambre, California

Panel Design and Erection: Pacific Curtainwall, Inc., Long



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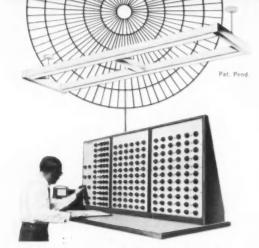


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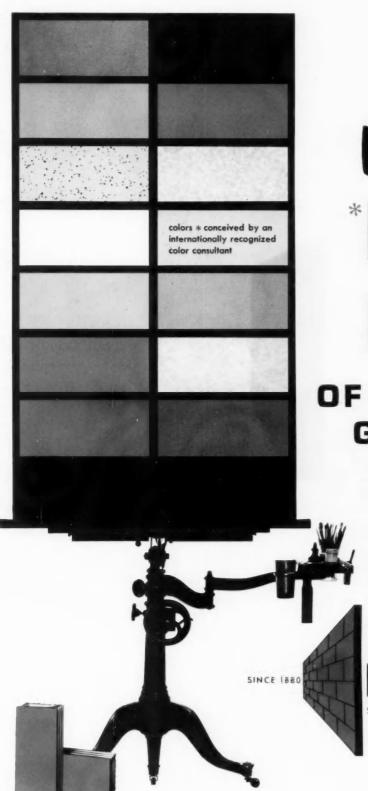
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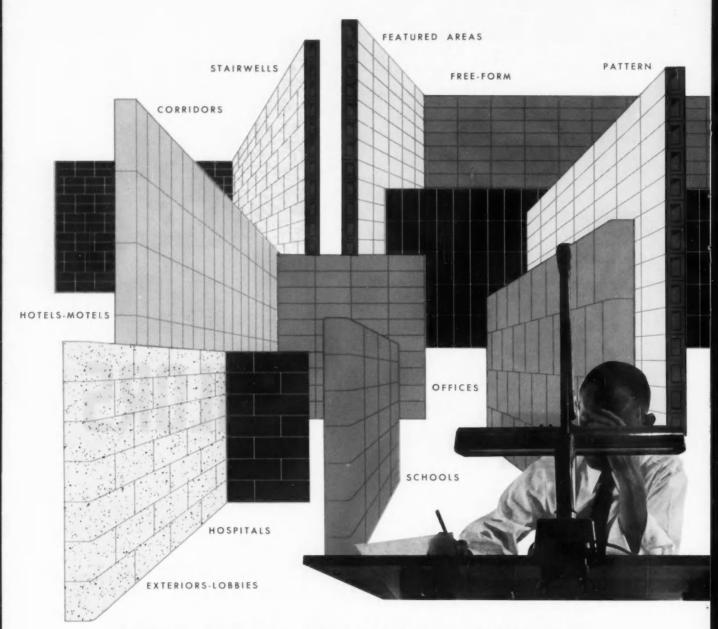
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METAL LETTERS

Consulting Engineers Hold Annual Meet

California's consulting engineers—structural, mechanical, electrical—met late in January to discuss problems of practice, ethics and education with a concern for higher professional standards that was refreshingly open and frank.

The two-day meeting, held at Monterey, Calif., heard papers prepared by its own members on subjects—such as "Checking Procedures of the State Division of Architecture" by James Stratta; "Professionalism in California Universities" by Stephenson Barnes; "Enforcement of the Engineering Act" by J. G. Wright; various aspects of fees; and a proposal by Dudley Deane for formation of professional divisions within the Association which are of statewide concern.

Of particular interest to other professional groups were the discussions on formation of new Association divisions (newly elected president John Blume said that "this could mean a turning point in the organization" and argued for "unselfish service to those groups who need help whether all are Association members or not"), on an up-

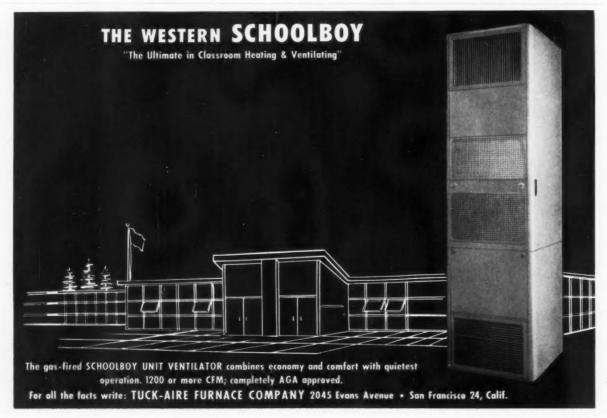


New officers of the Consulting Engineers Association of California elected at recent statewide convention in Monterey are Sheldon Swickard, Los Angeles; Pecos Calahan, San Francisco, executive secretary; William Ropp, Los Angeles; Richard Kennedy, Dudley Deane, both of San Francisco; Peter Serrell, Pasadena; Arch McDougald, Fresno, secretary; John A. Blume, San Francisco, president; Bertram Goodenough, Sacramento; Frank Alderman, Los Angeles, vice president.

grading of the standards for membership, for stricter admission requirements, for better self-policing, and for greater help to the State Board of Registration in enforcing the Engineers' Practice Act.

On fees, the summary statement was that "each member will have to put Association policy above selfish interests." Although no action was taken on it, considerable interest was aroused by a proposal, put forth by William Moore of San Francisco, that the Association establish a credit and professional rating bureau for members' reference in regard to new clients.

Retiring president Harold King of Sherman Oaks was elected delegate to the Consulting Engineers Council, a national organization with membership of 1194.

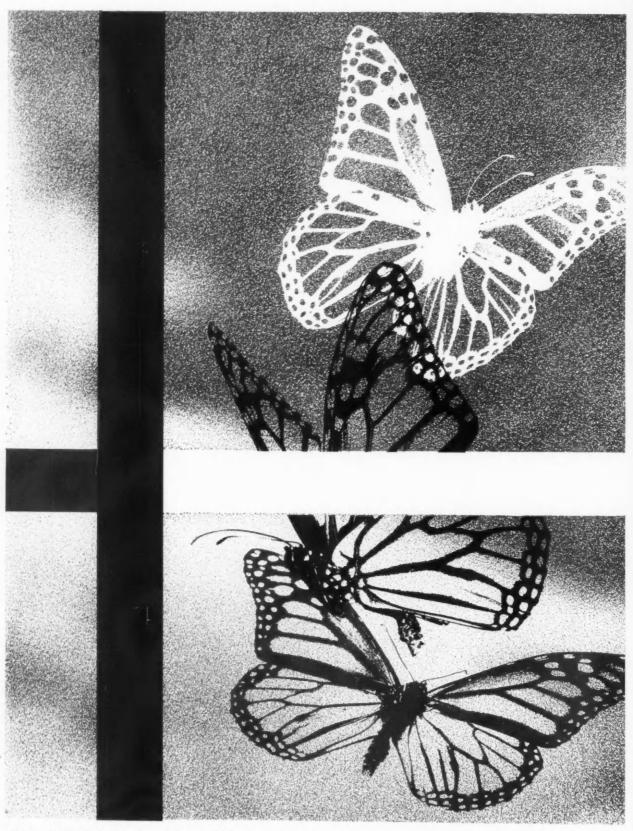


Problem
High-foot-candle levels from recessed fixtures were required for Pereira & Luckman's contemporary design of the new IBM Western Headquarters Building.

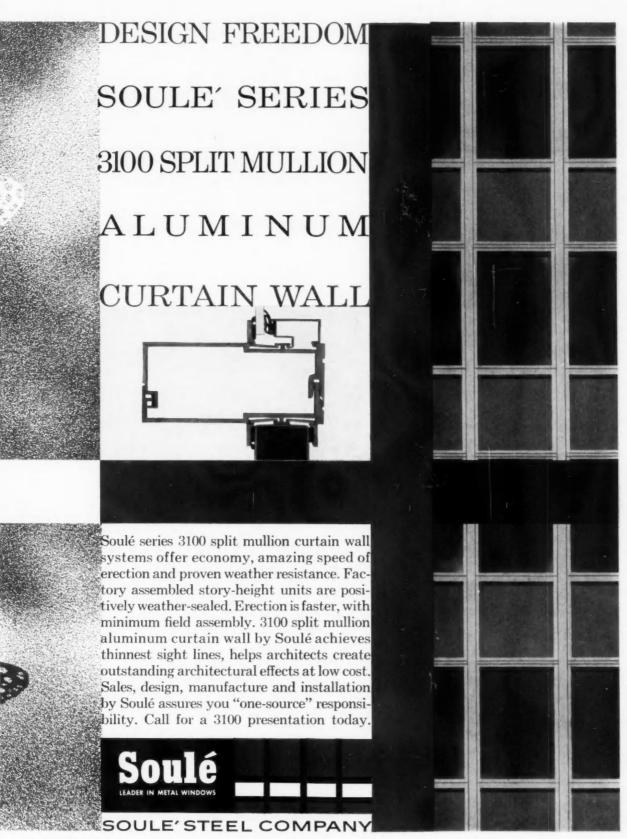
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Waste Space

What's Creative-and Who?

Just before Christmas and three times since, while you and I were in the midwinter doldrums, a group of psychologists in Berkeley were deep in the process of interviewing and testing the cream of U. S. architecture's practicing exponents as part of a five year study of the creative process. So far the psychologists have had writers, mathematicians, painters, physicians, engineers and scientists. Now it's the architects' turn, and some 40 of them will contribute their time, their minds and their personalities to the investigation.

The study is being done by members of the staff of the Institute of Personality Assessment at the University of California. The Institute's director, Dr. Donald W. Mac-Kinnon, who was a speaker on the program at the California Council's convention last fall at Monterey and had a good chance there to acquaint himself with architects en masse, is in charge of the study of architects.

The four principal questions which the study seeks to answer are: What are the distinguishing characteristics of the creative personality? What kind of situations—life, social or cultural—inhibit or facilitate creative thought and action? What is the nature of the creative process? What qualities identify creative products?

We'd like the answers, too—if there are or can be any definitive ones. But as of now even the psychologists don't know how definitive their data may be. One thing is sure: the Institute has had a wonderful time with the architects' groups. Word filters out that among the architects have been some of the most creative people so far interviewed in the whole program of study.

Wonder who they are? Well, it's all confidential. When the study is completed we can all have fun trying to guess who was part of it, who said what, who contributed what impression of the profession.

Unwilling Accessories to Unavengeable Crime

Ten years ago Ken Stowell, who was then editor of the RECORD, quoted Will Rogers' famous remark that "all I know is what I read in the papers" and Frederick Ackerman's less-known but equally pungent extension of it, "but I get a lot more from what I read between the lines." The quotations introduced an editorial on the use of architectural magazines—which could have been written today for the same reasons and making the same points.

It is a phenomenon of the architectural public that the profession takes a highly personal and proprietary interest in its professional press. The consumer public takes its *Time*, its *Saturday Evening Post*, its *Saturday Review* in phlegmatic mood compared to the way architects take their magazines.

Now this has both its good and its bad points: it is good because it shows that the public to which the magazines are addressed really cares about what's published, and that it acts as a stimulus to the editors of the magazines; and bad because this highly emotional approach to evaluating the magazines often attributes to them something which was never there and never could be there; or it fails to see what is there.

What Ken was pleading for can still be plead for: read—or look—for the continuing education of mind and eye; read for information of what your fellows do, think, say, try; read and look for fun as well as for study.

But don't, for goodness' sake, use the magazines as "copy books." Bad enough to have the responsibility, thrust on us by some of our readers, of being "tastemakers," without also having to be accessories, however, unwilling and unknowing, to crimes of imitation. E.K.T.

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E-R Center Under Way

Portland's long-delayed Exposition-Recreation Center is finally under construction-after five years of stormy debate over site, management and, more recently, costs-but its wood roof truss has been replaced by steel, a major disappointment to vested interests in a state whose primary industry is logging and woodworking.

When bids came in high on the first design, whose laminated wood roof supports were of unusual design (Western Section, January 1958, pp. 48-2, 3), the building was redesigned-in wood, with an alternate design in steelto bring it within the required budget range. No changes were made in exterior appearance, in planned seating ca-

pacity or in exhibit space. Bids on the roof, spanned by a conventional steel truss, came in lower than for the wood roof structure. Low bid was \$5,297,000, approximately \$1,000,000 less than the lowest offer on the first bid call; and steel roof construction won, by just about the margin of the cost of installing the sprinkler system which the city building code requires for a wooden truss. The E-R Commission, backed by the city fire marshall, tried unsuccessfully to have the rules modified on the basis that laminated wood is considered by many to be at least as fireproof as steel.

Skidmore, Owings & Merrill are architects for the building.

Denver Begins First Renewal Project

Avondale-first of six urban renewal projects planned for Denver-was given formal financial backing by the federal government in December, when the Housing and Home Finance Agency set aside a federal loan of \$1,834,-014 and a federal capital grant of \$1,030,469. The city will provide just over \$400,000 for this initial phase of

Land acquisition by federal-municipal funds was slated to begin early this year. By mid-1959, 441 dwelling units, most of them sub-standard, will have been demolished or rehabilitated, and the land will be prepared for new uses and offered on a competitive basis to private enterprise. Although the site includes 100 acres, only 50 acres will be redeveloped as the Avondale project. These will be put to residential use, with some areas set aside for commercial zones.

Denver's other renewal projects, some not yet off the drawing board, others in even earlier stages, are Blake Street, Whittier, Downtown (where a 20-block area would be cleared and redeveloped), West Colfax and Five Points.

Meanwhile, Portland and San Francisco were trying to catch up with Sacramento whose redevelopment program is far advanced over those of other Western cities.

For Students Only

Stanford University announces that several Harley J. Earl Scholarship Grants in Industrial Design and Architecture will be awarded this year. Further information may be had, through April 15, 1959, from the Executive Head of the Art and Architecture Department of Stanford University.

Sunset Home Awards

Sunset Magazine and A.I.A. chapters in the 11 Western States are sponsoring a second biennial Western Home Awards program. Separate awards will be given to custom-built and speculative houses, to subdivision designs, and to solution of local climate problems and difficult site complications. Entries will first be judged in three regional groupings-Pacific Northwest, Desert-Mountain, and California-Hawaii, and awards of merit given for each group. All-Western Honor Awards will then be made for the outstanding homes in the entire West. The Awards Committee is composed of the three Western Directors of the A.I.A.-Ulysses Floyd Rible of Los Angeles, Donald J. Stewart of Portland, Oregon, and Proctor Mellquist, Editor of Sunset. Awards will be made at the A.I.A. regional conferences this fall. The jury has not

Calendar of Western Events

- · MARCH 7-APRIL 5: Van Gogh exhibition. Seattle Art Museum, Volunteer Park, Seattle
- MARCH 7-APRIL 12: "The Architectural Genius of Bernard Ralph Maybeck," photographic exhibition, California Palace of the Legion of Honor, Lincoln Park, San Francisco. Sponsored by Museum, University of California College of Architecture, and California Redwood Associa-
- MARCH 13-15: First meeting, University of California Extension Division's Sensitivity Program, University Conference Center, Lake Arrowhead, Calif.
- MARCH 3, 10, 17, 24: Ernesto Rogers of Milan talks on architecture, Dwinnelle Hall, University of California, Berkeley
- · APRIL 30: Home Tour, Broadmoor and Washington Park districts, Seattle, sponsored by Seattle Art Museum
- MAY 7: "Guide Posts to Good Taste," panel discussion with J. Marshall Marin, President, Colorado chapter, A.I.D. Presented by Friends of Denver Public Library, Auditorium, 1357 Broadway, Denver

WESTERN SECTION

Index To Advertising

Manufacturers' Pre-Filed Catalogs of the firms listed below are available in the 1959 Sweet's Catalog Files as follows:

a Architectural File (green) ic Industrial Construction File (blue) le Light Construction File (yellow)

Le	Light Construction File (yellow)	
	All-Brite Fluorescent Fixtures, Inc	64-8
	Bayer Co., A. J	64-13
	Cemex of Arizona, Inc	64-9
	Denver Fire Clay Company	64-5
	Haves Corporation	64-19
	Kraftile Company	64-18
	Lighting Dynamics	64-15
	Porcelain Enamel Publicity Bureau	64-7
a	Puerto Rico Marble Industries	64-19
	Robinson Brick and Tile Co., The	64-11-12
	Smoot-Holman Co	64-10
a	Soule Steel Company	64-16-17
	Tuck Aire Furnace Co	64-14
	Weld-Rite Company	64-6

Western advertising offices: LOS ANGELES, Bob Wettstein, 672 S. Lafayette Park Pl.; PORTLAND, Bob Wettstein, 921 S. W. Washington St.; SAN FRANCISCO, Bob Wettstein, Howard Bldg., 209 Post St.







San Angelo Central High School, San Angelo, Texas. Architect: Caudill, Rowlett & Scott, Houston, Texas. Associate Architect: Max D. Lovett, San Angelo, Texas. Note: Pond shown at left is actually a site drainage pool.

LOF visits a public high school with a college campus atmosphere

Occupying 30 acres in the center of a Texas city of 60,000 is a campus-type public high school, unique and daring in concept.

There are 11 crisply designed structures, including a separate academic building each for sophomores, juniors and seniors.

Since it opened on September 1, 1958, the fame

of San Angelo Central High School has spread throughout the world. Visits and inquiries from educators and architects average 100 a week.

We were the 81st to sign the guest register that week, and the first man we talked to was Supt. G. B. Wadzeck.

To start the ball rolling we said, "This is an

The gemlike Sarah Bernhardt Theater crowns the 30-acre campus.



amazing school, looks like one of those 'costly school palaces' there's been so much controversy about."

Answer: Well, it's not! As a matter of fact, it's a bargain. The total cost, including land, fees, et cetera, was \$3,500,000. And the building cost, alone, was \$2,604,277, which comes down to only \$12.41 per sq. ft.

It's an "ageless" school that can be expanded or altered to adapt to changes in educational procedures. For instance, the plate glass partitions between classrooms and corridors can be rearranged to make classrooms for a few pupils, or lecture rooms for 200. We can do it here because there are no interior load-bearing walls.

Question: Speaking of those glass walls between classrooms and interior corridors, isn't that rather unusual?



Garald B. Wadzeck, Superintendent of Schools, explains advantages of staggered class schedules. Students coming and leaving at different hours avoids congestion, expands use of facilities, provides hours for part-time jobs.



Peripheral corridor in auditorium is glazed with Parallel-O-Plate* Glass through which the whole campus can be viewed.

Answer: Yes, but they're desirable because some rooms have large areas of exterior brick walls. To compensate, so that teachers and pupils won't get claustrophobia, we opened the interior walls with glass. In many places, though, you can see right through the buildings because of the glass.

Question: Doesn't that interfere with the use of visual aids?

Answer: Not in the least. The plate glass in the outside walls is a low-light-transmission type and we have drapes for the interior walls. We have invested over

Typical academic building (there's one each for sophomores, juniors, and seniors). All structures are air conditioned. The upper windows here are glare-reducing Parallel-O-Grey* Plate Glass. Locker area below is glazed with Parallel-O-Plate.







Corridors and classrooms are separated by walls of Parallel-O-Plate Glass Drapes can be drawn when visual-aid equipment is used.







\$10,000 in a variety of visual-audio equipment and use it *all* effectively.

Question: I understand that sun glare and heat are intense here. What do you do about that?

Answer: The average high temperature here, from April through October, is 88.8 degrees, so our buildings are completely air conditioned. Glarereducing glass, plus wide overhangs, solved the glare problem even in the cafeteria and library where exterior walls are almost all glass.

We don't want the students to feel confined. Our indoor swimming pool, for instance, has glass from floor to roof because swimming is usually an outdoor sport.

Question: Why are there so many buildings instead of just one?

Answer: To bring closer relationship between students and teachers; to separate "quiet" and "noisy" activities; to eliminate the pedestrian congestion you get in a single, big, school building.

Now you'll want more information, I'm sure, but from a different viewpoint, so I'm going to turn you over to our Principal, Minton White.

Question: We've enjoyed visiting your school, Mr. White. How do you keep it so spotless and clean?

Answer: Well, the air conditioning filters out most of the dirt and dust.

Question: But with all that glass, isn't maintenance expensive?

Answer: No, our over-all maintenance and janitorial costs are almost the same despite the fact

Judy Loyd, Editor of the school paper, demonstrates the inexpensive lockers.



that we have more than twice the square feet of floor area, compared with the old school.

Question: What has been the effect of the school on the students?

Answer: The whole environment is better. The students dress better, behave better, and are more attentive. Over 70% of our pupils go to college, even though many come from low-income families.

Question: Has teacher recruitment been a problem here?

Answer: The school *draws* teachers. We've had applications from as far away as Canada. And the important point is—they stay! I'd like you to talk to some of our faculty.

We found Mrs. Evelyn King, Miss Fannye Vance and Mr. Hugh King, during a free period in one of the teachers' lounges.

Question: What do you like best about the school?

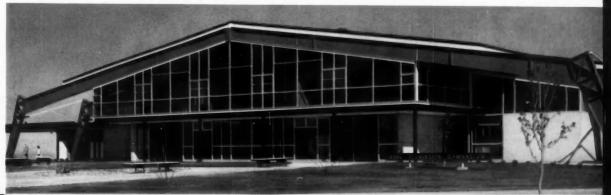
Mrs. King: By comparison, other schools look grubby. I love to be able to look out the windows. And I don't have to wear shades (Texan for sunglasses) as I did in the old school.

Miss Vance: This is the first classroom I've had with good acoustics. I used to be hoarse at each



Each academic building has a lounge where teachers can relax between classes, grade papers or discuss problems. Left to right: Mrs. Evelyn King, Miss Fannye Vance, Mr. Hugh King.

Babe Didrickson Building houses gymnasium and swimming pool. Upper area glazed with Parallel-O-Grey, lower area with Parallel-O-Plate.



day's end, but here I never have to talk above a living-room conversational level.

Mr. King: That's right. And the non-glare light, the air conditioning and the acoustics all help to make us less tired at the end of the day.

Principal White had arranged for us to interview James Leavell, President, and Margo Kirkman, Secretary of the Student Body, so we talked to them next.

Question: How do you like your new school?

Margo: It's simply wonderful. The school spirit is better than anyone can remember. And almost everybody participates in the rallies and assemblies.

Jim: The kids seem to act different here. In the old school, they used to break into locked lockers. Here we have bin-type lockers—no doors, no locks. I've had an expensive slide rule in mine all season, and it hasn't been touched.

The story of this school would not be complete without visiting the Architects—Caudill, Rowlett



and Scott. William Caudill and William Pena, members of the designing team, agreed to answer our questions.

Question: Do you consider San Angelo High School a "costly palace"?

Mr. Pena: Not at all! This is not a cheap school, certainly. Nor is it the most expensive. On the other hand, it's a very economical school when you think of it in terms of the long-range cost. Also, in these terms, the emotional quality of space affecting students and teachers, as in any school, may prove to be priceless.

Question: How did you plan to achieve this quality of space?

Mr. Caudill: Actually, we were seeking a variety of spaces with different emotional qualities to avoid dull monotony in this large high school. Children need a variety of atmospheres. In the student locker areas, for instance, we fenced in as much of the outdoors as we could . . . a kind of "captured outdoor space". The atmosphere here is completely different from that of the classrooms above.

Some classrooms do not have a wide-open view to the outside; these merely peek out. Inside, however, glass helped us break out of the traditional "box" of the classroom. The glass walls separating classrooms and corridors, the glass transom partitions, create a quality of fluidity of space, and at the same time provide an effective sound screen.

We planned the outside "rooms" of the campus the courts, the mall, the lake area—with as much care



Library walls are glazed with L-O-F Parallel-O-Grey, glarereducing glass. Compare landscape through the glass and the open doorway, for color fidelity.

as the inner ones. Then we opened up these planned vistas for choice points of view from the buildings.

One of the striking features of San Angelo Central High School is its use of grey plate glass. Looking through it from inside, you're not aware that the glass is tinted. But viewed from the outside, it's a pleasing grey, has a mirror-like quality, reflects clouds. Quite beautiful and exciting. Where it was desirable to introduce high-quality lighting, low-transmission, grey glass was used. Where it was desirable to see into the buildings, clear plate glass was installed.

This, then, is but a brief report on San Angelo Central High School, an exciting combination of architectural and educational features that can best be summarized by the single statement that it is designed to inspire students with a Desire to Learn.







This is how scenery looks through (left to right) Parallel-O-Grey, Parallel-O-Plate and Heat Absorbing Plate.

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Parallel-O-Grey is neutral grey in color. It transmits approximately 44% of average daylight (illuminant C) as compared with a transmission of about 89% through regular ½ " plate glass and 75% through ½ " Heat Absorbing plate glass. This lower light transmission results in reduction of glare and brightness. Like ½ " Heat Absorbing it excludes approximately 40% of the solar energy.

Parallel-O-Grey plate glass is ¼" thick. It is also available as the outer light of Thermopane insulating glass units.

Parallel-O-Grey is also available in 1/4" Tuf-flex tempered plate.

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L-Q-F Heat Absorbing plate glass is pale bluish-green in color. It transmits less than 50% of the sun's radiant energy to keep interiors cooler. This lowers initial cost for air-conditioning equipment, and cost of its operation. On the other hand, Heat Absorbing plate-glass transmits approximately 75% of the visible daylight, providing ample daylight for clear vision.

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Laboratory tests made in accordance with accepted standards show these direct transmission factors for the different types of glass:

Direct Transmittance	Parallel-O-Plate Glass	¼" Heat Absorbing	Parallel-O-Grey
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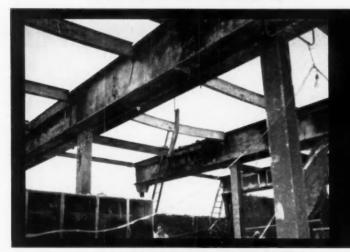


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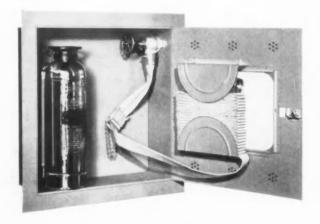
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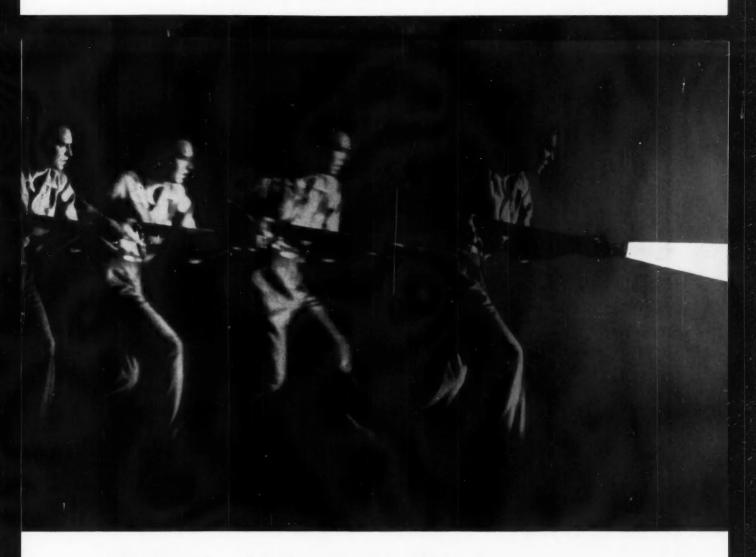
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FOUL-PROOF door rack



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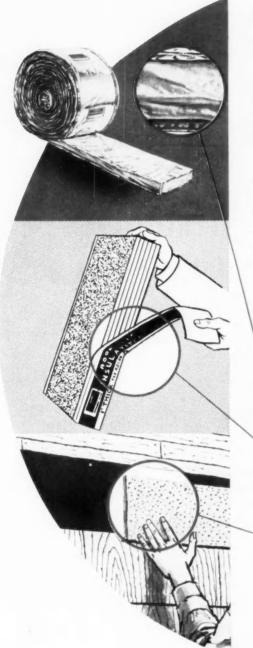
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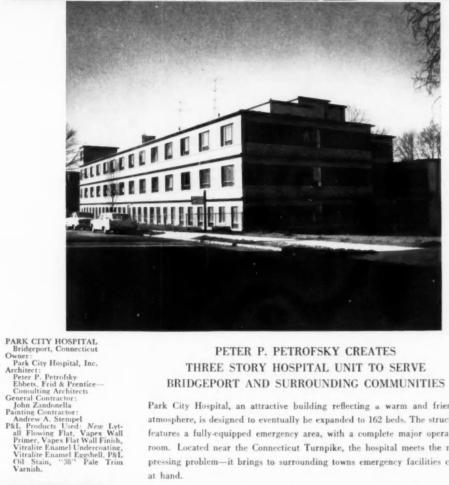
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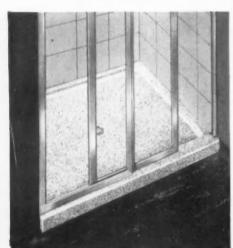
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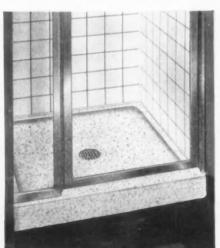
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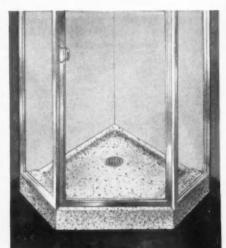
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RECTANGULAR—New FIAT floor in the latest, most popular shower shape. Provides more elbow raom and a more luxurious appearance—helps sell homes! Measures 48" x 32".



SQUARE—Modern built-in beauty at a modest price. FIAT Pre-cast Shower Floors insure fast, foolproof, economical installation...and no call backs.



CORNER—Here's the economical way to turn a $1\frac{1}{2}$ bathroom house into a 2 bathroom house! Now you can build a full bathroom in the space formerly needed for a powder room.

Since 1922 . . . First in Showers

80

/ Packaged Showers . Doors . Floors . Toilet Room Partitions

FIAT Pre Cast Terrazzo Shower Floors are made of lustrous marble chips set in pure white cement. Do away with sub-pan, mortar, and tiling. Save hours of costly installation time. Builds-in more quality at less cost!

call-backs!

FIAT PRE-CAST SHOWER FLOORS INSTALL IN MINUTES INSTEAD OF HOURS—ARE LEAK-PROOF FOR A LIFETIME!

Leak-proof Fiat Floors are quick-to-install—they simply slide into place leaving only a single drain connection for the plumber when he's connecting shower supply lines. Fiat Floors won't crack; are permanently leak-proof—even if building settles; saving you costly time consuming callbacks. And Fiat Floors have the good looks of quality that sells on sight. FIAT Pre-cast Shower Floors are recommended for 100% customer satisfaction by leading plumbing contractors. Distributed by leading plumbing wholesalers. Send coupon today for facts and figures on FIAT—the shower floor that gives you more!



FIAT METAL MANUFACTURING COMPANY

FIVE COMPLETE PLANTS: Long Island City 1, New York; Franklin Park, Illinois; Los Angeles 63, California; Albany, Georgia; Orillia, Ontario, Canada



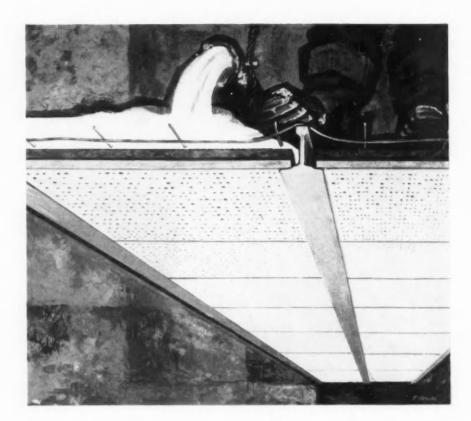
FIAT METAL MANUFACTURING COMPANY 9300 Belmont Ave., Franklin Park, Illinois

Please send me your Pre Cast Shower Floor folder.

NAME____TITLE___

COMPANY

ADDRESS_____



Three things to look for in a poured roof deck

Any soundly-designed poured-in-place roof deck should have these three essential features: (You'll find them all in Gold Bond Poured Gypsum Roof Decks.)

Allowance for temperature movement – Reinforcing wire mesh and bulb tees will allow temperature movement without disturbing the sound base for built-up roofing.

Resistance to uplift—When bulb tees are welded to the main purlins and embedded in the gypsum concrete, they have resisted uplift forces of up to 125 lbs./sq. ft.—80 lbs. more than normally required.

Strength of a monolithic slab — When complete, a Gold Bond Poured Gypsum Deck forms a solid, steel-reinforced 2" slab of gypsum rock. It becomes an integral part of the building, adding structural strength able to resist fire, flood and hurricanes.

Look for all 3 of these features when you select a deck. A Gold Bond® Poured Gypsum Roof Deck has them all, plus the best possible fire insurance ratings. For a complete kit to help you design and specify poured gypsum decks, write Dept. AR-39.

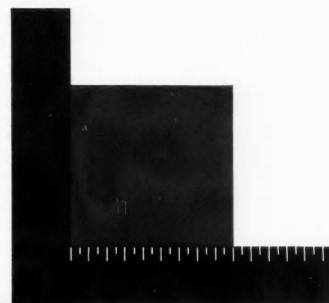
NATIONAL GYPSUM COMPANY, BUFFALO 13, NEW YORK

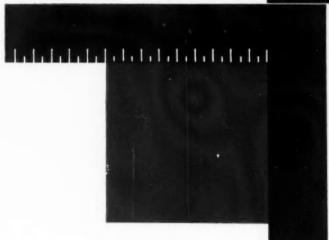


a step ahead of tomorrow

you can depend on

V-BAK.





UNIFORM SIZE

Imagine how many new creative opportunities you have for floors of Quarry Tile when you specify Murray Uniform Sized V-Bak Quarry Tile.

You can now attain design symmetry, color balance and lasting beauty. Write for details!

V-BAK TILE COMPANY INCORPORATED
MANUFACTURERS OF QUARRY TILE CLOVERPORT, KENTUCKY

V-Bak Quarry Tile gives you all these features:

- 1. Uniform size
- 2. Uniform color
- 3. Even texture
- 4. Smooth surface
- 5. Low maintenance
- 6. Lasting service

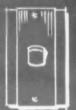
A.I.A. File 140, 23-A-1



PUSH IT



ROCK IT



ROLL IT



PRESS IT



the new



ROCKER-GLO

SWITCH

the beauty...the design...the performance you've hoped for in one switch

After intensive testing, Pass & Seymour proudly presents ROCKER-GLO . . . the *one* switch that answers all your needs.

A switch that is trouble-free and packed with eyeappeal.

ROCKER-GLO does the job of *all* types of switches. It combines toggle action *and* press action with luminous and quiet features that answer all individual customer needs.









ROCKER-GLO SPECIFICATIONS

Available as follows:

Despard Type with Strap

Roll-it

- Despard Type, Interchangeable
- Narrow Rocker for Tumbler Switch Plate (the ideal replacement switch)
- Single, Double Pole, Three way or Four Way
- 15 or 20 Amps, 120/277 Volts A.C.
- Easy-to-Wire Pressure or Screw Terminals
- In One Color Only Luminous Ivory

Watch for your P&S salesman with your FREE sample or write and have him stop to show you the new Rocker-Glo.

SPECIFICATION GRADE

ROCKER-GLO . . . the switch that LOOKS RIGHT . . . FEELS RIGHT . . . and IS RIGHT for every type of wiring job.

Dept. AR-359.

Pass & Seymour, Inc.,

Syracuse 9, New York

60 E. 42nd St., New York 17, N.Y. 1440 N. Pulaski Rd., Chicago 51, III. In Canada: Renfrew Electric Limited, Renfrew, Ontario

ROCKER-GLO

the switch that obeys every touch!

PUSH IT ROCK IT ROLL IT PRESS IT

... no matter how you operate ROCKER-GLO, you'll find the merest brush or flick provides smooth-as-satin rocker action... and ROCKER-GLO glows in the dark!

Check these features:

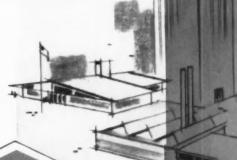
- ✓ Whisper-quiet
- Glows in the dark
- Dependable instant action
- Engineered to eliminate call-backs
- Perfect for any decor
- Easily installed







Pressure or Screw Terminals



FOR Friendly WARMTH

Weyerhaeuser 4-Square

IDAHO WHITE PINE

♠ For modern design, pine paneling often adds the desired touch of warmth and friendliness. In traditional design, knotty pine is frequently the essential factor in creating an atmosphere for gracious living. As architects know, the informal charm of genuine knotty pine paneling enhances the beauty of both contemporary and traditional home and commercial design.

Architects will be glad to know that Weyerhaeuser 4-Square Idaho White Pine is again readily available in popular Sterling and Standard grades. These grades are ideal for paneling, cabinets, interior and exterior trim, built-ins, boards and battens, and for scores of other uses.



Weyerhaeuser 4-50UARE®



IDAHO WHITE PINE

First Choice FOR MANY USES

(Sterling and Standard Grades)

Again architects may confidently specify Weyerhaeuser 4-Square Idaho White Pine for a broad range of uses. Until recently, the supply of Idaho White Pine could not satisfy the demand for this favorite wood. Now tree farming with its scientific management of forest lands, established decades ago . . . plus improved manufacturing facilities . . . has made this species readily available.

When you specify Idaho White Pine for beauty and durability, you also give carpenters a species with which they enjoy working. It saws easily and sands quickly to a smooth finish, nails well, and readily takes stains and paints.

Selected paneling items, in a choice of patterns, are bundled and wrapped in heavy protective

paper. This fine paneling is delivered clean, unmarred, and ready for application.

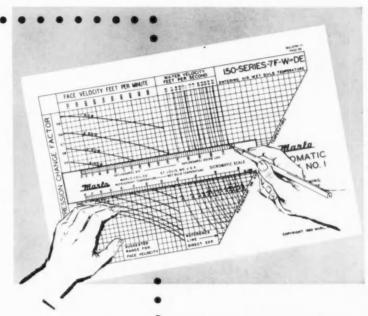
Weyerhaeuser Sales Company FIRST NATIONAL BANK BUILDING . ST. PAUL 1, MINNESOTA

Now...Save Time...Save Money ON COIL SELECTION

with **Marlo** sicromatic charts and rule...

for the Architect and Engineer

- No More Trial-and-Error Calculations
- No Interpolations



A QUICK, ACCURATE WAY TO DETERMINE NUMBER OF TUBE ROWS · REFRIGERANT TEMPERATURE · LEAVING AIR TEMPERATURE

When selecting coils, there's no need to waste time on long mathematical equations and trialand-error calculations with pages and pages of tables. These handy charts and rule from Marlo permit direct graphical coil selection in a matter of seconds, with the simple location of two straight lines. On one chart, you can read all necessary data for a particular application, including proper refrigerant or chilled water temperatures.



FREE Revised Bulletin on MARLO COOLING COILS Complete with information or design, construction, dimensions, performance

Marlo

characteristics, etc.

coil co.

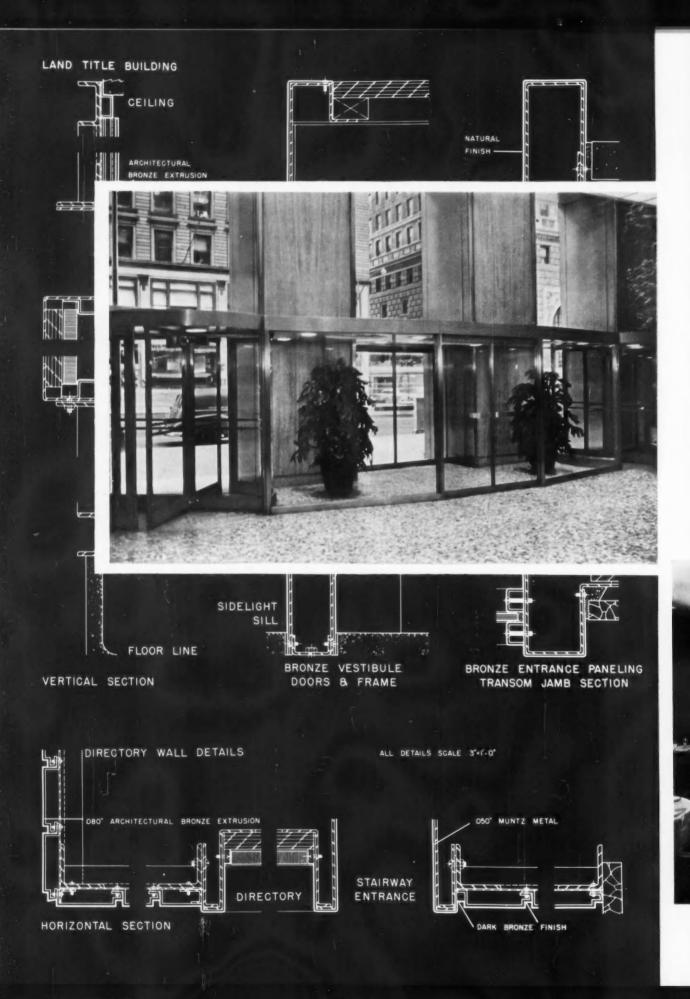
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Quality Air Conditioning and Heat Transfer Equipment since 1925

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NEW comprehensive publication on the use of copper, brass and bronze in modern architecture

64 Pages of Useful Information

The following chapter headings will give you an idea of the scope of contents.

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The Working of Copper and Its Alloys for Architectural Use.

Design Components.

Buildings of Outstanding Design, with Construction Details.

Standard Shapes and Sizes.

Fabricating Techniques.

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Suggested Specifications.

"Architectural Metals" by Anaconda, illustrated in full color, is a practical, detailed book covering all aspects of the use of copper and copper alloys in current architectural design.

It discusses available metals, their compositions, colors, forms, physical properties and architectural applications. It contains instructions for obtaining various finishes and for economical maintenance, with detailed specifications.

The book has a selection of color plates showing twenty-eight examples of outstanding design in metals, some with fabricators' shop drawings.

Get your copy by filling in the coupon below, attaching it to your company letterhead.

Illustrations from "Architectural Metals by Anaconda." Left: View of vestibule and door openings in Land Title Building, Philadelphia, and page of fabricator's shop drawings. Below: View of dining room in Socony Mobil Building, New York City.



ARCHITECTURAL METALS

Made by The American Brass Company

ARCHITECTURAL METALS, ANACONDA

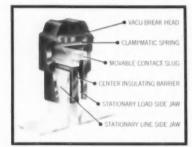
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S	treet
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FOR SAFETY'S SAKE SPECIFY VACU-BREAK POWER PANELS



Close-up of Vacu-Break head shows movable contact slug inside the compact arc chamber. The Clampmatic spring assembly assures a bolt-tight contact, helps speed "break". This combination guarantees positive and safe operation, long switch life.

You switch with safety when you choose BullDog Power Panels with Vacu-Break* switch units! Exclusive Vacu-Break design houses contacts in compact are chambers that limit the oxygen supply... actually starve the arc before it can explode and pit or burn contacts. Maintenance is practically eliminated.

Contacts in the Vacu-Break unit are attached directly to the operating handle for positive, safe switching every time. When the handle is in the OFF position—you know the switch is off! For extra safety the

units have interlocking doors. The Vacu-Break unit also provides clamped-pressure switching contacts to prevent overheating. Clampmatic* design simulates a *bolted connection* when in the ON position . . . accelerates the break, too!

In recent tests, Standard BullDog switches with Amp-Traps** were subjected to 100,000-amp short circuit current. They were undamaged! You can get this extra safety and long-lasting performance by specifying BullDog Vacu-Break Power Panels.



BULLDOG ELECTRIC PRODUCTS DIVISION I-T-E CIRCUIT BREAKER COMPANY

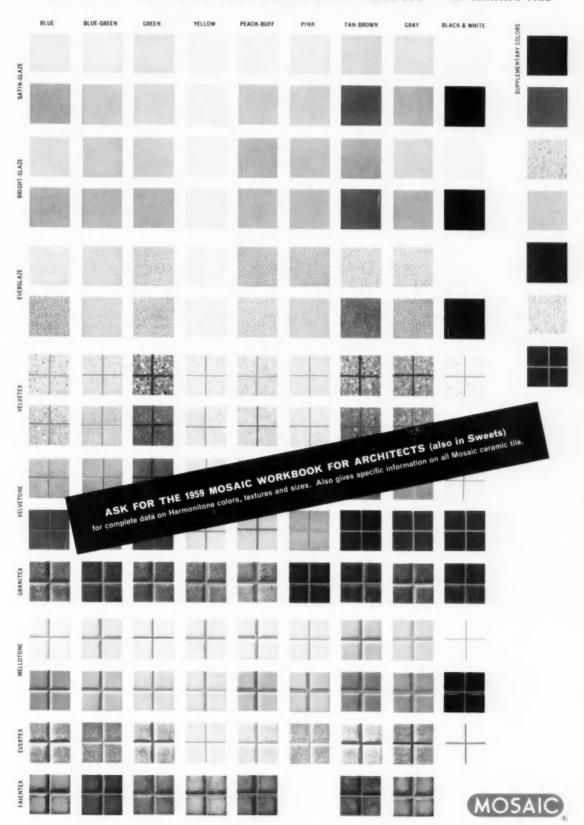
BOX 177 • DETROIT 32, MICHIGAN

In Canada: 80 Clayson Rd., Toronto 15, Ont. Export Division: 13 East 40th St., New York 16, N.Y.

*Vacu-Break and Clampmatic are registered trademarks of the BullDog Electric Products Company. **Amp-Trap is a registered trademark of the Chase-Shawmut Company.

The New Mosaic Harmonitone Palette

IN CERAMIC TILE



THE NEW HARMONITONE PALETTE

THE MOSAIC TILE COMPANY

A.I.A. FILE NO. 23-A

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MOSAIC. The New Harmonitone Palette

This new Mosaic Harmonitone Color Palette is the latest development of The Mosaic Tile Co. It has been called the clearest, most logical and most useful aid to tile selection ever presented to architect, contractor and owner.

Even more important, the new Harmonitone Palette suggests how floors and walls can now be knowingly designed with attractive variations in tile shapes and textures, whether within one "color family" or in combinations of different but compatible colors.

The Mosaic Harmonitone Palette includes nine compatible color groups coordinated to each other. Each represents a color basic to design and construction. Colors within a group are related but deliberately are not matched to each other. Subtle differences in color relate to the differences in texture and finish among the various types of tile.

The variety of hues and tones in each group gives broad selectivity. The character of the colors gives harmony with various other building materials and plumbing fixtures.

There is a planned coordination of colors within a group which enables glazed wall tile to blend with glazed or unglazed mosaics. It also permits the combination of glazed and unglazed mosaics

into patterns. In the modular sizes, various shapes, as well as colors, can be combined.

The new color numbering system is an important part of the Harmonitone Palette development. Each number clearly signifies its exact place in the Palette. This is a big help in the preparation of a simple and accurate color specification.

The 1959 Mosaic Ceramic Tile Workbook for Architects, Form No. 236, gives complete data on the new Harmonitone Palette in addition to much interesting information on all Mosaic ceramic tile. The 1959 "Workbook" is in Sweets.

THE MOSAIC TILE COMPANY

America's largest manufacturer of ceramic tile

General offices: Zanesville, Ohio

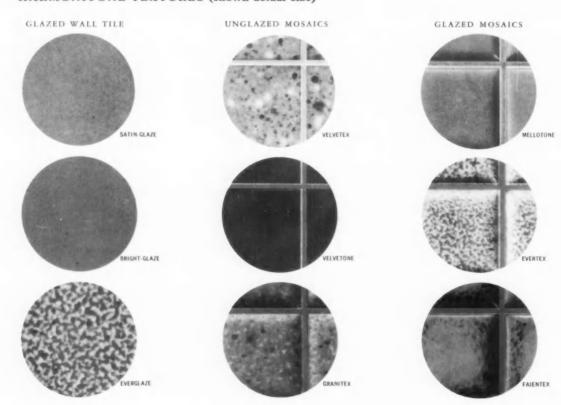
Member: Tile Council of America, Inc. and The Producers' Council, Inc. Member: Tile Council of America, Inc. and The Producers' Council, Inc. Showrooms and Warehouses: Atlanta, Baltimore, Boston, Brookfield, Wisc., Buffalo, Chicago, Cleveland, Corona, Cal., Dallas, Denver, Detroit, S. El Monte, Cal., El Segundo, Cal., Ft. Lauderdale, Fresno, Greensboro, N.C., E. Hartford, Hempstead, L.I., N.Y., Ironton, O., Jackson, Miss., Kansas City, Little Rock, Los Angeles, Matawan, N.J., Miami, Milford, Conn., Minneapolis, New Orleans, New York (Showroom only), Philadelphia, Portland, Salt Lake City, San Antonio, San Diego, San Francisco, Santa Clara, Seattle, Tampa, Washington, D.C., Zanesville, O.

Representatives: Birmingham, Cincinnati, Fair Haven, N.J., Memphis, Oklahoma City, Pittsburgh, Spokane, St. Louis.

Distributors: Albuquerque, Havana, Honolulu, Houston, St. Louis, Hato Rey, P.R.

Plants: Zanesville and Ironton, Ohio, Matawan, N.J., Little Rock, Ark., Jackson, Miss., Corona and El Segundo, Calif.

HARMONITONE TEXTURES (shown actual size)

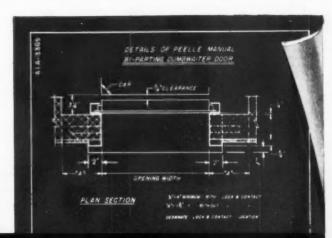




Dumbwaiter specifying suggestions for architects preparing hospital designs

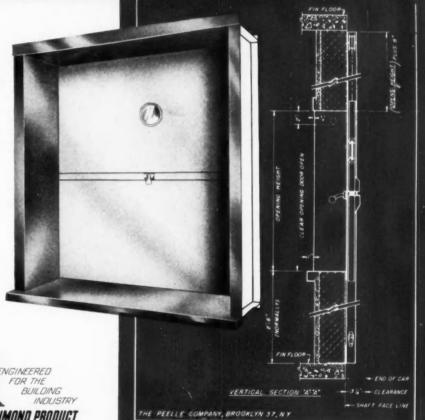
- Use stainless steel dumbwaiter cars and car doors for cleanliness and to prevent corrosion.
- Use retiring cams and "true" interlocks... for quieter operation... to prevent unauthorized access at intermediate floors... for safer operation because doors must be closed and locked before dumbwaiters can be moved.

Specify Stainless Steel



for DUMBWAITER DOORS

- To eliminate repainting costs due to scratched and worn finish on painted surfaces.
- To assure permanent attractive finish providing cleanliness and freedom from corrosion.



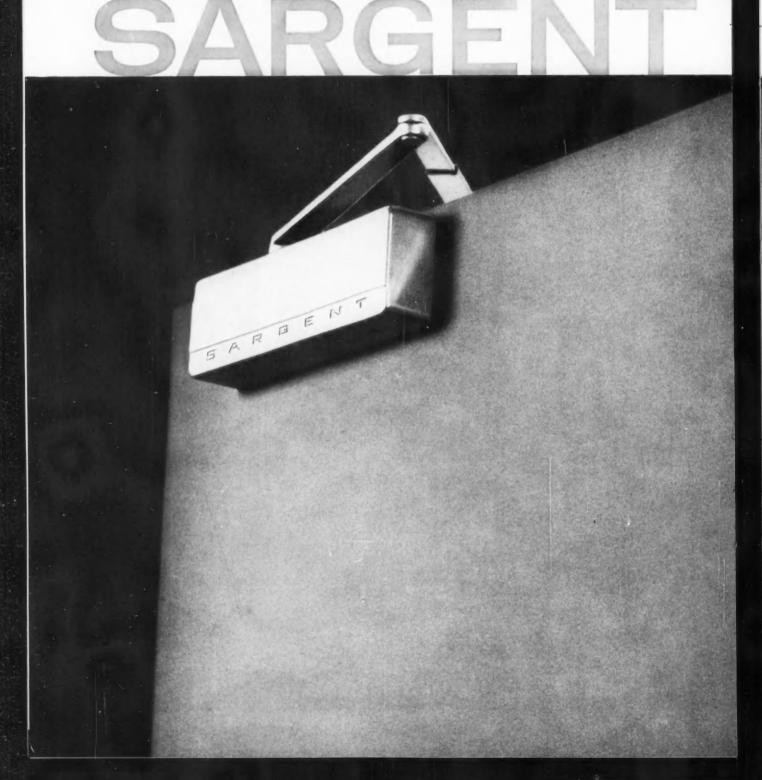


SEE OUR CATALOG IN SWEET'S ARCHITECTURAL FILE

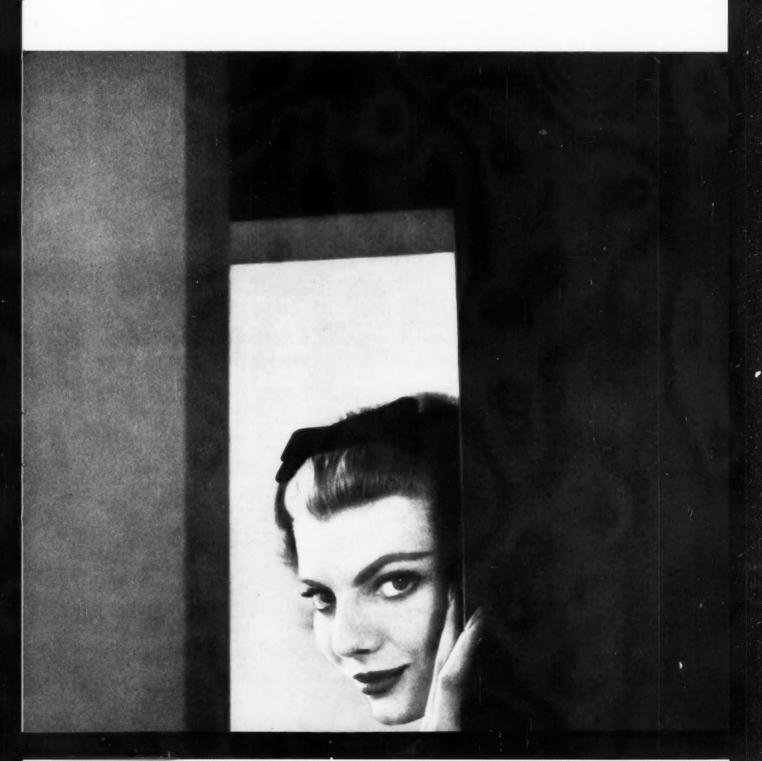
THE PEELLE COMPANY 47 Stewart Avenue . Brooklyn 37, N.Y. . Offices in Principal Cities

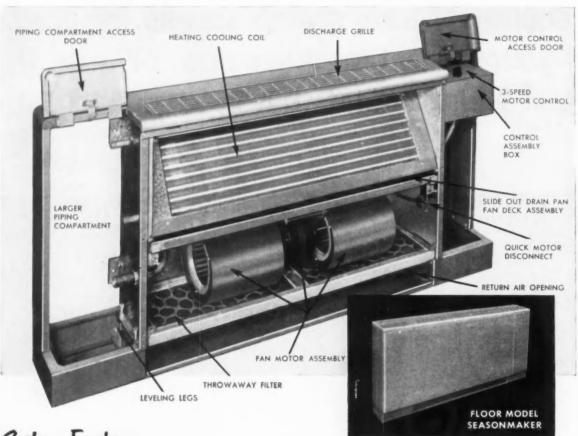
PEELLE FOR DOORS FREIGHT ELEVATOR DOORS - DUMBWAITER DOORS - INDUSTRIAL DOORS

now...for the first time anywhere, a complete line of surface and concealed door closers. for all applications...all door sizes, both exterior and interior. no sacrifice in



efficiency over conventional surface closers of equivalent size. styling speaks for itself. call your **sargent** supplier now. or write to **sargent & company**, new haven 9, connecticut.





Extra Features

Year Round with these hin-line design SEASONMAKER REMOTE AIR CONDITIONER McQuay thin-line design individual **REMOTE AIR CONDITIONERS**

McQuay thin-line design individual room Seasonmaker units have been redesigned for modern, compact styling, and all are only 81/2 inches thin and 25 inches high. There are four models-ceiling, hideaway, floor and basic-each in five sizes, affording a minimum of space necessary for installation.

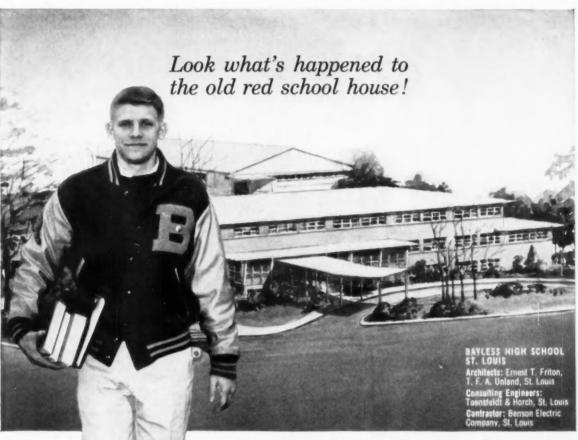
All McQuay Seasonmakers utilize central station heating and cooling with capacities of 220, 330, 440, 520 and 640 cfm. The four smaller sizes are equipped with 1050 rpm motors, while the largest has 1500 rpm. They furnish individual room comfort at any desired temperature level-heated, filtered air in the winter and cooled, dehumidified and fiftered air in the summer.

McQuay thin-line design Seasonmakers are ideal for multi-room buildings, such as hotels, apartments, motels, schools, hospitals, offices and residences. All have the threerow McQuay Ripple-Fin coils. They are ultra-quiet in operation and each, of course, has the inherent built-in quality for which McQuay is famous. For complete information, call the McQuay representative in or near your city, or write McQuay, Inc., 1605 Broadway Street N.E., Minneapolis 13, Minnesota.

4 MODELS SIZES

EACH ONLY 8 1/2 THIN, 25" HIGH





St. Louis' first all electric school equipped with

FRANK ADAM

ELECTRICAL EQUIPMENT

TYPICAL FRANK ADAM EQUIPMENT INSTALLED IN BAYLESS HIGH SCHOOL



"E" Frame Circuit Breaker Panelboard for heating circuits.



KSF Distribution

Other Equipment: PFS-KSF Feeder Distribution Panelboards; LNTP Panelboards; HE Busduct for Service Entrance.

Gone are all the old-fashioned concepts of what a school should be. Here is an educational plant that demands—and has in Frank Adam equipment—the very ultimate in efficient, dependable power control for heating, lighting and all the other facilities needed for the most modern of high schools.

This school of the future holds many ideas for you. Write about any school plans on which you are working—plans that could be stepped ahead many years with Frank Adam Electrical Equipment.



and our golding in a rice.



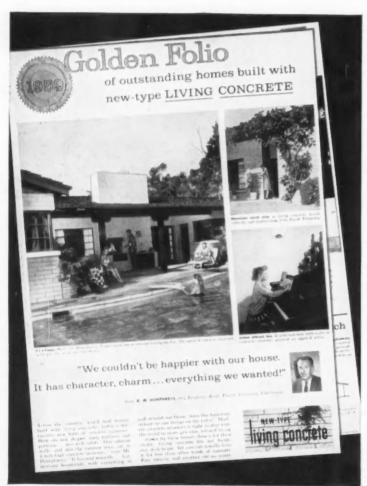
P.O. BOX 357, MAIN P.O. - ST. LOUIS 66, MO.

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959 Golden Folio

of outstanding homes built with new-type LIVING CONCRETE

appears April and May in top "home" magazines!



Newest advertisement by PCA — 3 pages in full color—featuring beautiful homes of today's newest forms of concrete masonry!

Again, important promotion effort is being put behind the newer forms of concrete masonry. Another impressive advertisement in this continuing campaign dramatizes the story for millions of Americans... creates still greater acceptance for this building material so suited to modern moods and needs.

Spring breaks out in April and May, and so does this colorful 3-page folio—in Better Homes & Gardens, House Beautiful, House & Garden, and in Living for Young Homemakers.

Beautiful homes built with one of the countless new forms of concrete masonry are depicted. Each home dramatically illustrates how new sizes, textures and colors combine to create charm, character and livability. Here's striking evidence of how today's concrete masonry suits any style home, any locale.

All this is keyed to a descriptive and promotable idea . . . new-type Living Concrete! Architects, builders, financial people, as well as home buyers, are giving modern concrete masonry a fast-growing role in today's construction market.

PORTLAND CEMENT ASSOCIATION

A national organization to improve and extend the uses of concrete



On any drafting material ...



You draw sharper, clearer with Eagle Turquoise



TURQUOISE LEAD HOLDERS hold any TURQUOISE lead (5B to 9H) in a building grip

EAGLE "CHEMI + SEALED" TURQUOISE DRAWING 2

ROUDISE DRAWING PENCILS are made in 17 degrees, 6B to 9H

EAGLE "CHEMI * SEACED" TURQUOISE DRAWING

IING 2H



TURQUOISE WITH ERASER, in grades 4B to 6H, is increasingly popular as a field tool

We've run tests on every drafting material made—including some that aren't even on the market yet! On <u>all</u> of them, TURQUOISE consistently out-performs other pencils.

Here's why: the strong TURQUOISE needle-point stays sharp longer. You get the world's cleanest lines—for the world's sharpest reproduction. TURQUOISE'S "electronic"

graphite glides more smoothly (without skipping) over every material. And these superior qualities are combined with perfectly uniform grading—pencil after pencil!

So why switch pencils when you switch drafting surfaces? Standardize on Eagle TURQUOISE!

WANT A FREE SAMPLE? Write for a TURQUOISE lead, pencil, or pencil-with-eraser in the degree you'd like to test on your favorite drafting material. Eagle Pencil Company, Danbury, Conn.





Visitor's Snack Bar, Bishop Clarkson Memorial Hospital, Omaha, Nebraska

Architect: Leo A. Daly Co., Omaha, Nebraska

TERRAZZO whets your appetite for IMAGINATIVE DESIGN

Give your imagination free rein and let Terrazzo
take it from there. Relish the virtually unlimited color range.
Order absolutely any design you wish. Like the architect who specified Mosaic pillars, Terrazzo counter curbing and flooring for this restaurant, you'll be satisfied to see your ideas carried out faithfully.
Terrazzo also satisfies demands for permanence and practicality.

Marble hard and concrete durable, it lasts as long as the building it beautifies. No painting, refinishing or costly repairs are ever needed; maintenance is minimized. Dirt can't get a foothold in the smooth jointless surface; cleaning is easy.

Both Terrazzo and Mosaic are available for floors, stairs, walls and wainscots. For detailed information, write the Association in Washington, D. C. Free AIA Kit upon request. Catalogued in Sweet's.

Member Producers' Council



For medical clinics, as for other permanent, fire-safe buildings, glulam timber members provide beautiful and economical structural framing.

For information, write us or see your nearest

Timber Structures representative.

TIMBER STRUCTURES, INC.

P. O. BOX 3782-A, PORTLAND 8, OREGON

Division offices in Ramsey, New Jersey; Schiller Park, Illinois; Dallas, Texas
DISTRICT REPRESENTATIVES IN MAJOR CITIES THROUGHOUT THE UNITED STATES

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per square foot: \$11.00.



Win yourself this carload

while you get acquainted with America's broadest

Big promotion going on! Two weeks from now, this same Flintkote flatcar starts rolling into big space ads in LIFE and SATURDAY EVENING POST. Other powerful selling ideas are coming up in READER'S DIGEST too. The purpose: to demonstrate that Flintkote makes the broadest line of building products in America, and to help everyone who moves Flintkote products into the homes of America.

While the whole country's getting a look at the length and breadth of Flintkote's line . . . you can cash in . . .

win yourself every can, case and carton you see above!

Or you can win the equivalent in cold cash . . . \$5000. Or win one of 121 other cash awards!

EASY TO ENTER!

Read the official entry rules (right). Complete the entry blank in this ad and mail it to FLINTKOTE CARLOAD CONTEST, Box 7A, Mount Vernon 10, New York. Hurry! Each entry must be postmarked no later than April 15th, 1959 and received by April 21st, 1959.

Nothing to buy! 122 chances to win!

GRAND PRIZE

Three choices:

- The products shown on the flatcar illustrated.
- The equivalent in Flintkote Building Products of your choice.
- The cash value, \$5000.00.

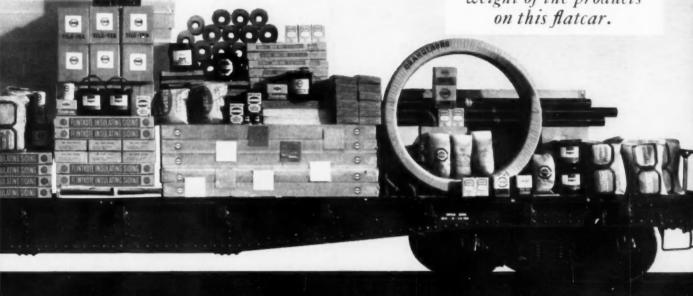
Plus 121 Cash Awards

2nd Prize\$500 cash 20 third prizes, each \$100 cash 100 fourth prizes, each \$25 cash

Enter today! Flintkote's \$10,000 CARLOAD CONTEST

Guess

how many building products the Flintkote Company makes and guess the total shipping weight of the products on this flatcar.



(or \$5,000 in cash)

line of building products

FLINTKOTE CARLOAD CONTEST RULES

- (1) Only one entry per person. Each entry must be mailed separately and may be submitted on either the official entry blank or on ordinary paper bearing your name and address.
- (2) Entries will be judged by the Reuben H. Donnelley Corporation on the basis of accuracy of answers to (a) the number of different products the Fintkote Company makes and (b) the total shipping weight of all the products shown on the flatcar in this advertisement.
- (3) In the event of a tie, tied contestants will be asked to complete the following statement in twenty-five words or less: "The F intkote line of products is a good line because ...". Thes will be broken by judging these statements on originality of thought, logic, clarify and conciseness of expression. In the event of a final tie, duplicate prizes will be awarded. The decision of the judges is final.
- (4) This contest is open to all dealers, distributors, builders, specifiers and architects in the continental United States and Canada, except employees and their immediate families of The Flintkote Company, its affiliates and their advertising agencies.
- (5) This contest is subject to all Federal, state and local laws, ordinances and regulations, and is not open to contestants in any area where state or local laws, ordinances or regulations render participation illegal.
- (6) All entries, contents and ideas therein become the property of the Flintkote Company to be used as it sees fit.
- (7) Winners will be notified personally or by mail about six weeks after the close of the contest. Names of the winners will be available about 60 days after the close of the contest to those sending stamped, self-addressed envelopes to FLINTKOTE CARLOAD CONTEST, Box 7A, Mount Vernon 10. New York.

OFFICIAL ENTRY BLANK FLINTKOTE CARLOAD CONTEST

The number of building products made by the Flintkote Company is

The total shipping weight of the products shown on the flatcar is Pounds, Ounces. Mail to:

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UNIV. MEDICAL CENTER at St. Louis, Mo.



 $7\frac{1}{2}$ -Ton Frick unit air conditioner serving four research and lecture rooms.

Here II Frick unit air conditioners and 42 Frick compressors supply the necessary cooling services for operating rooms, private rooms, auditorium and chapel, class rooms, nurse-interns' dormitories, offices, libraries, laboratories, cafeterias, kitchens, special freezers, research departments, morgues, animal rooms, etc. Installation by L. V. Fleiter Co., Inc., Frick Distributors in St. Louis, Missouri.

Whether you need conditioned air, cold water, ice, cold rooms, or very low temperatures,—for human comfort, food service, process work, quick freezing, research, or any other commercial

or industrial purpose,—there's a Frick system to meet your exact requirements.

Let us quote now on the equipment you need.

Write . . .

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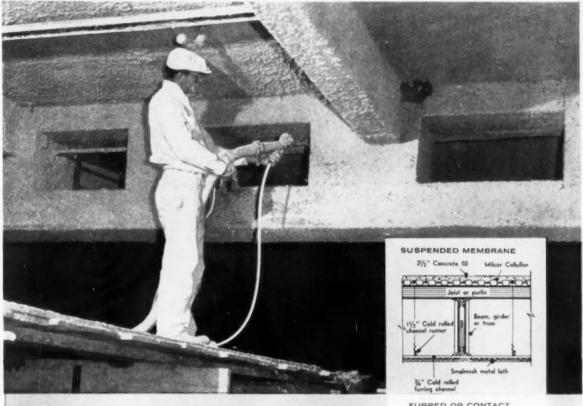


Three Frick "ECLIPSE" compressors which air condition several operating rooms at Barnes Hospital, St. Louis.

PRICK CO.
WAYNESBORD, PENNA., U. S. A.

Membrane fireproofing with Milcor Metal Lath offers fire-ratings to meet all code requirements

Structural members fireproofed at savings in weight and cost



Membrane fireproofing protects beams, girders, and columns as effectively as concrete encasement, yet weighs considerably less.

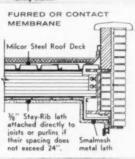
In fireproofing columns, for example, architects have reduced weight per lineal foot by as much as 86%. They have specified 1¾" lightweight aggregate plaster on Milcor Furlath (self-furring metal lath), instead of 3" concrete with coarse aggregate fill.

With membrane fireproofing, you can also use lightweight floor construction — thin concrete decks over Milcor Celluflor. You save on structural steel — cut costs substantially. Applying plaster by machine augments the savings.

See Sweet's Architectural File, section 12a/In, for other design advantages in the industry's most complete line of metal lath, corner beads, casing beads, stools, bases, coves, and accessories. Or write for catalog 202.

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MILCOR

There's freedom to choose when

the choice is CRANE





Convenient wrist operation is a feature of this Crane Norwich vitreous china lavatory. Gooseneck spout accommodates pitchers, vases, etc.



Foot-operated valve on Crane Oxford vitreous china lavatory prevents cross-infection. Hands never touch faucets.



Hygiene lavatory is ideal for patients' rooms. Available for right- or left-hand corner installation, also, without side splash.



Crane Coolbrook vitreous china, semirecessed drinking fountain has elevated bubbler base for maximum sanitation. Available with single or central water chiller.



Crane Institutional free-wall bath, to build into end wall. Made of durable cast iron with porcelain enamel finish. Cast iron base included.



A Crane exclusive—Dial-ese control—practically drip-proof because it closes with water pressure, not against it. All working parts contained in low-cost replacement unit.



Infants' bath made of Crane Duraclay. Smooth, vitreous china surface is kind to babies' skin. Includes 20gallon tank with dial thermometer.



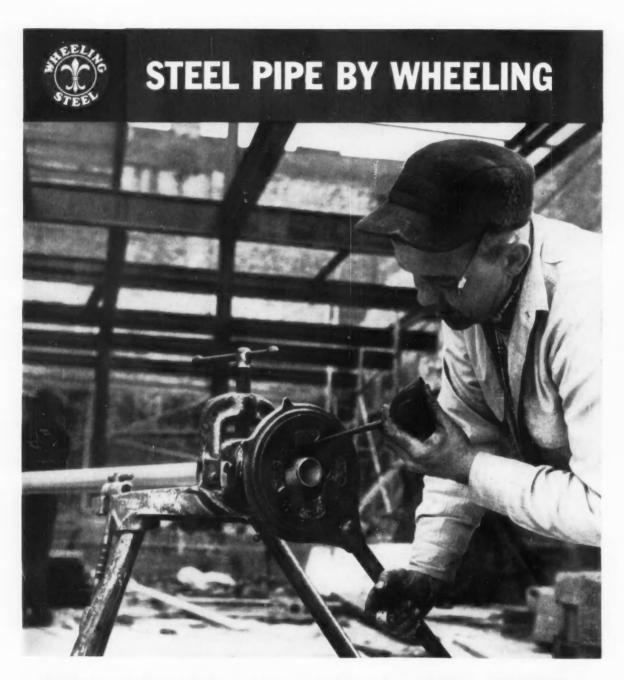
The Cornell, one of several service sinks in the Crane line. Has flushing rim and siphon jet flushing action. Duraclay construction assures long service, easy maintenance.



Crane Placidus closet has whirlpool, quiet-action bowl and flush valve that minimize noise. Has clongated rim, open front seat.

CRANE THE PREFERRED PLUMBING

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Ask your Wheeling man for the full details about money-saving, time-saving Wheeling Pipe, both black and galvanized. Wheeling Steel Corporation, Wheeling, W. Va.

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RENAISSANCE

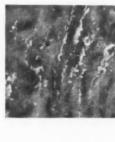
VINYL FLOORING

Dimensional Splendor Surpasses Natural Marble





VR-51 CAMEO PINK



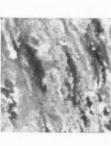
VR-48 SIENA BROWN



VR 91 AZURE BLUE



VR.4 ALABASTER BEIGE



VR-49 AGATE BEIGE



VR.9 GOLDEN PEARL



capturing subtly the infinite shadings and varialasting, quiet, comfortable and so easy to care for through colors . . . Amtico Renaissance is longflooring luxury. All-vinyl . . . with through-andtions of natural marble, represents the ultimate in effects on floors . . . walls, too. Its regal appearance, fully translucent colors to create the most original flooring. Amtico Renaissance offers twelve beauti-Achieving a whole new realm of elegance in viny

World's Largest Producer of Vinyl and Rubber Floorings



AMERICAN BILTRITE RUBBER COMPANY TRENTON 2, NEW JERSEY

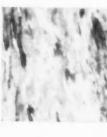
In Canada: American Biltrite Rubber Company Ltd., Sherbrooke, Que. 368 Furniture Mart, Los Angeles . 500 King St. W., Toronto, Ontario Showrooms: 295 Fifth Ave., N.Y.C. . 13-179 Merchandise Mart, Chicago



VR-6 IMPERIAL JADE







VR-7 GROTTO GREEN





VR-2 CORSICAN BLACK

VR.3 GRANITE GREY





VR 8 ROMAN CEDAR



VINYL FLOORING

RENAISSANCE

SPECIFICATIONS AND DATA

DATA MATERIAL

9" x 9", 12" x 12" ... (other sizes on special order)

• "Set-on" cove base ... heights 4", 6" (plain vivyl colors only) - Feature strips (Stardust and plain vinyl colors) up to 1" wide, 36" long • Border material 36" x 36". Amtico Permalife Vinyl 1/8" . . . all-vinyl, color throughout thickness • Standard tile sizes . . .

INSTALLATION DATA-FLOORS

Renaissance Adhesive (white) or Amtico Water-proof Cement (light yellow). Over plywood, regular masonite and wood floors, install 15 lb, asphalt off-white). On suspended concrete, use Amtico saturated flooring felt, using Amtico Renaissance Adhesive or Amtico Waterproof Cement. Do not For on-grade installations, use Amtico Chemical Set Cement (black) or Amtico Epoxy Cement paint floor; Amtico Renaissance Adhesive covers black color of felt satisfactorily if spread with standard notched trowel

latex underlayment. Tile may be installed directly to floor, using Amtico Renaissance Adhesive or Amtico Waterproof Cement. Latex underlayment in joints can be painted to match plywood or can be covered with skim coat of Amtico Renaissance Adhesive applied with flat edge of trowel. Use patching and levelling under Renaissance floors, whether on concrete or wood. nailed, using screw type nails, and joints filled with latex underlayment, not asphaltic compounds, for Plywood and masonite floors must be

Floors should be rolled during application to insure a smooth floor, and re-rolled immediately after completion of installation with a three-section

Please send detailed literature and FREE complete set of Amtico Vinyl and Rubber Flooring samples to:

AMTICO, Dept. AR-1, Frenton 2, N.J.

150 lb. roller. Renaissance Flooring cuts easily at temperatures of 80°-100° F. It should not be heated over 110° F. and should not be heated with an open flame. Use thin-bladed knife, such as Stanley. = 199, for cutting.

INSTALLATION DATA-WALLS

and paint, use Amtico Renaissance Adhesive or Amtico Waterproof Cement. Apply with norched trowel over a 10-15 square foot wall area and set tile immediately. Bottom row should be blocked with thin strip of wood nailed in place temporarily On plywood, standard hardboard, gypsum wall board or asbestos cement board (free from grease to prevent slippage. On unpainted seasoned plaster walls, use Amtico Renaissance Wall Cement and cover within 15 to ive must transfer to back of tile. Roll tile as installation proceeds, using hand roller. Work from center of wall toward corners, rolling each 20 minutes of spreading. Apply with notched trowel. Check periodically to see that tile is not being applied to adhesive that has skinned tile thoroughly as installed nstallation of Renaissance is not recommended on interior surface of exterior masonry walls unless moisture vapor barrier is installed or a two-inch greater air space exists between exterior masonry wall and interior wall

MAINTENANCE DATA

kept free of traffic until cement is thoroughly dry and hard (approx. 24 hours). Do not wash floor for 48 hours after installation. Damp mop the floor cleaned with =00 grade steel wool. Use proper glides and casters on all furniture. Do not use paste wax. A coat of Amtico Floor Dressing adds to the glossy appearance of the floor and mini-A new Amtico Renaissance installation shall be with Amtico Floor Cleaner or mild suds or detergent. Floors subject to heavy, dirty traffic can be mizes maintenance,





Mercantile National Bank, Dallas, Texas

College of N. Y.; Renard Hospital, St. Louis; Smithsonian Institution, Washington, D. C. Other outstanding Amtico Vinyl installations: Federal Court House, Los Angeles; Denver Public Library; Atlanta Federal Savings; Food Fair Store, Baltimore; Macy's, N. Y.; City

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New way to fire low cost residual oil



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The MicroMist burner makes an airborne oil spray. (This is as far as other burners go.)



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The airborne spray is compressed. Heat of compression further divides oil particles.



THIRD

Quick decompression of air-oil vapor makes an oil fog that burns with a clear, soft flame.

Residual fuel oils average 10 per cent higher in heat value, yet cost less than light heating oils

Small and medium size heating plants can now fire economy fuels with power plant efficiency.

The Iron Fireman MicroMist oil burner requires little more supervision than an ordinary domestic burner. Every essential component is built in-even the refractory firing throat. No secondary air supply, no refractory checker floor, no gas pilot. (Oil fog is readily ignited by an electric spark.)

The use of low cost fuel is not the only economy feature. Efficiency ratings are very high. Modulating flame accurately accommodates itself to variable loads, eliminating excessive on-off cycling. In modern sealed boilers no high stack is necessary. Maintenance costs are negligible. (Nozzle does not require cleaning.) Any grade of oil, from light heating oil through No. 5 fuel oil can be fired without burner adjustment.

The MicroMist burner can be applied to your present boiler, or ordered as a complete boiler-burner unit with compact Scotch boiler ready for service connections. Capacities to 25 gph.

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AUTOMATIC FIRING EQUIPMENT FOR HEATING, POWER, PROCESSING



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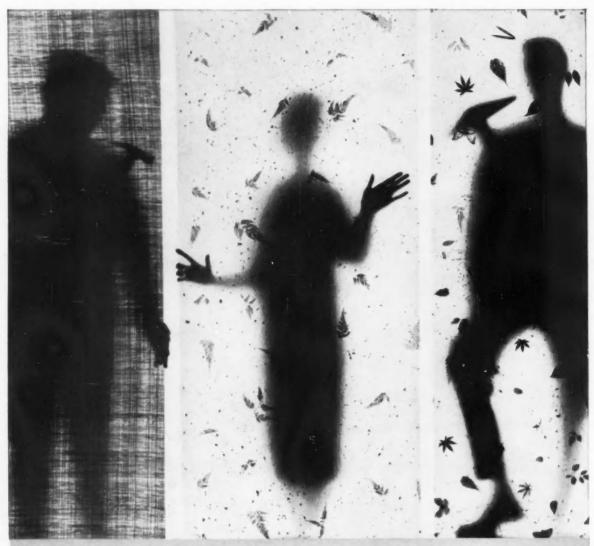
IRON FIREMAN MANUFACTURING CO. 3142 W. 106th Street, Cleveland 11, Ohio (In Canada, &O Ward Street, Toronto, Ontario)

Please send me more information and specifications on the Iron Fireman MicroMist burner.

Firm Address State

ARCHITECTURAL RECORD March 1959

111



THIS IS THE PANEL OF EXPERTS



• America's foremost decorators and architects stand behind Barclite Fiberglass Panels...today's most dramatic influence in interior design.



Translucent and delicately-patterned, Barclite adds airiness to rooms...softly diffuses light...and it's so lightweight and flexible it can be installed with ordinary hand tools. They use Barclite Decorative Panels for room dividers, sliding doors, dropped ceilings, skylights...in homes, offices, stores, beauty shops—everywhere. Barclite is unbelievably low in cost...so economical to install... truly an outstanding way to work decorating magic.

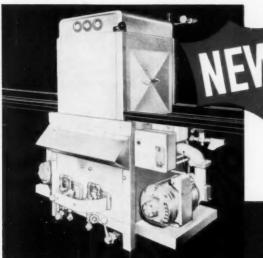
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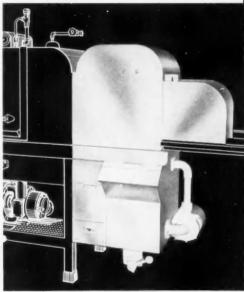
DISHWASHER DEVELOPMENTS

by Hobart

Space...speed...savings...sanitation. These are the areas where Hobart research is constantly improving the performance of the industry's most complete line of quality dishwashing machines. Here are the latest of these developments—each designed to make a specific dishwashing operation more efficient for your commercial kitchen layouts.

NEW two-tank machine in space of one-tank type

Another industry-first by Hobart. Now you can have all the improved sanitation and efficiency of a two-tank machine with power wash, separate recirculating power rinse, and final fresh-water rinse—all in a machine with the same betweentables dimensions as our popular AM series single-tank machines. The unique design of the Hobart AM-77 dishwasher features two separate Hobart-built motors and pumps.



NEW timed countertop dishwasher

A favorite straight-line machine for smaller operations, the SM series of machines now offers improved automatic-timed control for power wash and rinse cycles...is more compact, simplified. Single control for timed operations. "On-off" pilot light indicates machine operation. Another important feature: manual rinse for glasses always available.



NEW stainless steel... inside and out

The exclusive Hobart undercounter or free-standing dishwasher now features all interior and exterior surfaces of durable, easily cleaned stainless steel. Ideal for convenient yet out-of-the-way installation in bars, drugstores, snack bars, diet kitchens, rest homes and as a glass-washer unit in higher volume kitchens. Capacity, 600 glasses an hour.

NEW compact power scrapper...saves water

This newest addition gives Hobart the most complete scrapper line. The Model RS gives power recirculated scrapping advantages in space of 22 inches —using overflow wash water from the dishwasher, saves water and reduces operating costs. Many new features such as front-removable scrap trays.

It is good insurance for you to specify machines that can be depended upon to guarantee the efficiency of the kitchens you design. As an architect you'll readily appreciate the performance and dependability that are synonymus with kitchen machines bearing the Hobart name. You'll appreciate the flexibility of choice offered by the complete line of Hobart equipment.

Check Sweet's Architectural File for complete specifications on all Hobart kitchen and dishwashing machines. Or send in the coupon,



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A complete line by the World's Oldest and Largest Manufacturer of Food Store, Bakery, Kitchen and Dishwashing Machines

The Hobart Manufacturing Co., Dept. HAR Troy, Ohio
☐ Please send information on dishwashers. ☐ Please send information on other kitchen machines.
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My Name
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Marriott Motor Hotel muffles traffic roar with neoprene gaskets

The problem of traffic roar from a heavily traveled six-lane highway confronted the architects of the Marriott Motor Hotel in the nation's capital.

Neoprene gaskets were specified by the architects to help solve the problem. Channels of soft resilient neoprene gaskets were used to cushion air-spaced double-paned windows. Neoprene extruded gaskets with hollow cores were fitted to doors to absorb both sound and vibration. The problem of noise was eliminated so completely that today even nearby freight trains clatter along unnoticed by occupants inside the rooms.

You can solve problems involving soundproofing by specifying neoprene gaskets for windows and doors and at the same time keep them moisture-proof and weather-tight. If you want time-tested facts about the properties of neoprene, write for "Neoprene Gaskets for Curtain Walls," Elastomer Chemicals Dept., E. I. du Pont de Nemours & Co. (Inc.), Wilmington 98, Del.







(Above) For the Marriott Motor Hotel in Washington, D. C., sound-tight, weather-tight neoprene gaskets were used to help combat noise.

(Left) The motor hotel's double-paned windows were cushioned with neoprene.



Better Things for Better Living . . . through Chemistry

SYNTHETIC

RUBBER

NEOPRENE HYPALON® VITON* & ADIPRENE®

*Trademark for Du Pont Synthetic Rubber

(Extreme Left) Neoprene gaskets, fitting into rabbeting in 2¼" thick doors, proved effective in absorbing outside noise.



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The luminous facade shown above is just one of the many ways Plexiglas® acrylic plastic is being used in building applications. Others are dome skylights, lighting diffusers and lenses, signs, daylight-control panels, spandrels, partitions, and decorative glazing. The reason for this variety of uses? Plexiglas combines light transmission with wide color range, outdoor stability, light weight, resistance to breakage, and ability to be formed to almost any shape. Write for the names of building products made of Plexiglas, and for technical information and assistance on your specific projects.



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in Canada: Rohm & Haas Co. of Canada, Ltd., West Hill Crystal Glass & Plastics, Ltd., Toronto Supressively modern...



East Ohio Building, Cleveland



10 Lafayette Square Building, Buffalo

and HAUGHTON Automatic (Operatorless) Elevators will help keep them that way!

These outstanding additions to the nation's skyline will have the most up-to-date type of electronically controlled elevator systems, keyed to the age of automation.

Cleveland's distinctive new East Ohio Building will have comprehensive automation applied to its eight Haughton Automatic Elevators...to keep service in step with existing traffic demand at all times. The magic of an electronic computer system makes this possible... doing a far better job than the best human starter.

Buffalo's imposing new Tishman office building at 10 Lafayette Square will also be thoroughly modern with electronically controlled Haughton Automatic Elevators for highest efficiency in handling the anticipated heavy building traffic. Four of the five elevators in the build-

ing will be of the high-speed operatorless type, serving 20 floors.

Other features in these Haughton installations are equally advanced! The car interiors styled with soft lighting and stainless steel operational fixtures...safety improved over operator-controlled cars...and Haughton-engineered dependability throughout. Let Haughton help you find the modern answer to your elevator problems.



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116



"We improved our masonry mortars by switching to Atlas Masonry Cement"



Project: Barwise Junior High School, Wichita Falls, Texas. Architects: Jesse G. Dixon, Arch., R. B. Pardue, Asso., Wichita Falls, Texas. General Contractors W. C. Shelton, Lawton, Okla. Masonry Contractors W. P. Howle, Wichita Falls, Texas. Dealer: Stephens Lumber Co., Wichita Falls, Texas.

"We cut our teeth on a portland cement and lime mortar," says

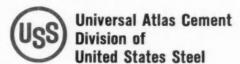
W. P. Howle, masonry contractor of Wichita Falls, Texas. "We were hard
to convince that any other mortar could compare. Until some
six years ago, that is. Then we tried Atlas Masonry Cement in mortar
for a small commercial building. We've been using it ever since."

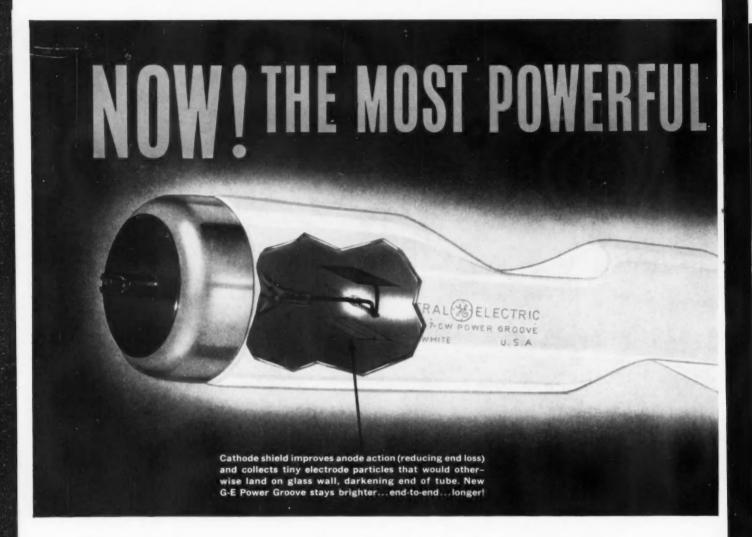
Here are the reasons why contractors are switching to Atlas Masonry Cement: It produces a smooth, easy-working mortar that "butters" easily, stays workable, assures a stronger bond. It requires less mixing water, minimizing shrinkage and cracking. Also provides uniform color in the mortar joints. Complies with ASTM and Federal Specifications.

For your copy of "Build Better Masonry," write Universal Atlas, 100 Park Avenue, New York 17, N. Y.

"USS" and "Atlas" are registered trademarks

M-74





NEW G-E POWER GROOVE LAMP...

- Gives most users lowest cost of fluorescent light...
- Saves them 10-30% on initial investment alone
- Stays cleaner, brighter longer-no darkened ends
- Will last about 3 years in single-shift service

The new Power Groove is the most recent advance in lighting from G.E., your most consistent source for new and improved lamps to give your clients more for all their lighting costs. If they are planning a new building, or remodeling an existing one, this dramatic improvement in lighting deserves first consideration.

LOWER CAPITAL INVESTMENT. That's the most exciting aspect of this new lamp. It costs no more than the original Power Groove, yet with all this light you can now plan on—and get—a higher level of lighting than was ever practical before. And the investment in lamps and distribution equipment is even more practical and economical!

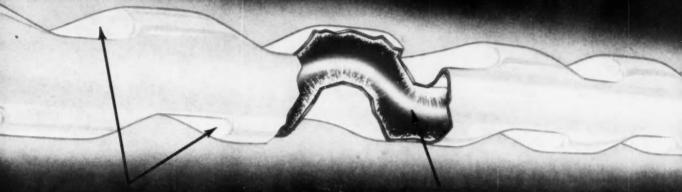
IMAGINE! A single 8-foot G-E Power Groove can deliver a startling 15,000 lumens—the highest light output obtainable from any fluorescent lamp you can buy today. This gives you the

lowest cost of fluorescent light for most new lighting systems, and establishes a new set of standards in overall lighting economy.

LIGHT OUTPUT STAYS HIGH. General Electric's efficient cathode shield reduces cathode wattage losses . . . and also collects the tiny electrode particles that would otherwise be deposited on the glass wall, darkening the lamp ends. General Electric Power Grooves now stay brighter . . . end-to-end . . . longer!

When your clients plan to build or expand, recommend the lighting levels and economies made possible by General Electric's new Power Groove Lamps for their general lighting. For more information, call your nearby G-E Large Lamp Distributor, or write: General Electric Co., Large Lamp Dept. C-913, Nela Park, Cleveland 12, Ohio.

FLUORESCENT YOU CAN BUY! RATED LIGHT OUTPUT 15,000 LUMENS



Grooves or panels "squeeze" arc to increase lightproducing power, give you same strength with thinner glass. They also aid light emission, enabling you to use more of total light given off by phosphor. New configuration makes arc stream travel in a wavy path, makes greater electric power available for producing light. You get the arc equivalent of a 9-foot lamp!

THE SECRET'S IN THE SHAPE

7.600 LUMENS



13,000 LUMENS



15,000 LUMENS



REGULAR FLUORESCENT, shown here in the conventional round shape of the High Output Lamp, has a straight arc stream. As in the case of any fluorescent, this arc causes mercury vapor to radiate energy which excites phosphor on inside wall. This, in turn, gives off light.

ORIGINAL POWER GROOVE, developed by General Electric in 1956, has an interrupted groove along one side, continuous except for bridging at regular intervals to increase glass strength. Grooves or panels "squeeze" the arc to increase the light-producing power.

NEW POWER GROOVE has grooves on both sides to accomplish same "squeezing" effect. In addition, it makes are travel in wavy path—a full foot longer in 8-foot tube! This gives you even more light-producing power. New shape also enables you to use more of the total light given off by the phosphor.

LONGER ARC STREAM, GREATER LIGHT-PRODUCING POWER GIVE YOU A NEW LOW IN COST-OF-FLUORESCENT-LIGHT FOR MOST INSTALLATIONS

Progress Is Our Most Important Product

GENERAL DE ELECTRIC

Here's Experience and Follow-Through that offers you



GENERAL CONTRACTORS:

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Pittsburgh, Pa.



See Sweet's Files (Architectural or Industrial Construction) or send for personal copies of the following Bayley catalogs:

Aluminum Windows Steel Windows and Doors Curtain Wall Systems Guard Window Detention Systems

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Windows and Curtain Walls

From the first moment windows and curtain walls figure in your planning, Bayley can be a big help to you.

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This Bayley leadership is not simply a matter of better products. It includes design co-operation — plus *follow-through* to actual building occupancy.

Bayley will gladly show you *pre-engineered* window and wall systems that permit broad originality of wall treatment . . . avoid the costs and delays of fully customized components . . . and give you a short-cut to both client approval and building completion. Your local Bayley representative will welcome a call!

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THE NATURAL BEAUTY OF California redwood is often specified by architects for its unique quality of complementing the texture of other materials...providing a rich contrast with the austerity of tile, brick and glass.

Architects: Buff, Straub and Hensman, in association with Saul Basi

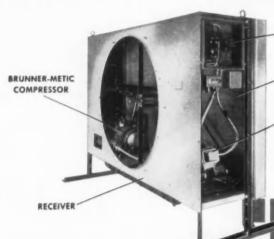


All the wonderful warmth of wood is best expressed in

in redwood.

CALIFORNIA REDWOOD ASSOCIATION . 576 SACRAMENTO STREET . SAN FRANCISCO I

CONCEPT IN BUILT-UP AIR CONDITIONING SYSTEMS



ELECTRICAL CONTROLS AIR COOLED

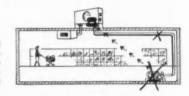
CONDENSER

FAN MOTOR

DUNHAM-BUSH



receiver in the same casing as the remote air cooled condenser there are substantial savings in space and instal-lation costs on built-up air conditioning systems.

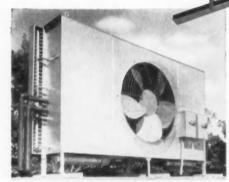


Eliminate expensive installation costs...plumbing...wiring...with a Dunham-Bush 'LRCU' Large Remote Condensing Unit. Here's a complete package consisting of a remote air cooled condenser, semi-hermetic compressor, magnetic starter, receiver, controls and refrigeration accessories all piped and wired.

Install on the roof (or other convenient location) and run the necessary refrigerant lines to the lowside equipment. Make electrical connections and the system is ready for operation.

Available in 5 models from 10 to 30 tons. Two-step starting makes units readily adaptable for capacity control. Two compressors furnished on 20, 25, and 30 HP units.

Write today for complete information.



Typical rooftop installation of LRCU unit.



Exterior installation of LRCU units, mounted on "I" beam frame.

Dunham-Bush, Inc.

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ARCHITECTS...
WHO DON'T BUILD
BROWNSTONES

Creative architects are discovering that Prem-Pan **Insulated Laminated Sandwich** Panels more than meet their needs for a building material suited to modern designs and construction methods. Light, easy to install in standard curtain wall systems, Prem - Pan Panels go up faster. stay up longer. Prem - Pan Panels retain the lustrous color locked into the polyester fiberglass cloth face which is laminated to the fire proof cement asbestos board and styrofoam core. Prem - Pan Panels never corrode or rot, will not chip or crack.

Specify Prem-Pan Insulated Laminated Sandwich Panels with the enduring beauty of glass. Available in a wide range of architectural colors.

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PP 80-2

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INSULATED LAMINATED SANDWICH PANELS

PREMIER PANELS, INC. 34 North Brentwood Bivd., St. Louis 5, Missouri

Also manufacturers of Insulated Translucent Panels
Interior Partitions • Insulated Roof Decking



SCHOOLS DISCOVER... NEW IDEAL FOR NEW CONSTRUCTION...

Reduces Installation Time...Cuts Costs!



Suntile SETFAST* Wall Tile AND MODERNIZATION PROGRAMS

Installs easily over existing walls!



FAST INSTALLATION — Ideally suited for thin-set installation method using either an approved adhesive or self-curing mortar.

SETFAST may be installed over mortar beds of conventional thickness skimmed with self-curing cement. No soaking required!



MODERN ECONOMY - 12-tile, factory inspected units cover $1\frac{1}{2}$ sq. ft. Individual operations reduced.



PERFECT SPACING—beautifully precise, automatic alignment and easy handling.

SETFAST Wall Tile is self-leveling... and conforms

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- in one-by-two foot sheets offer you design versatility with unheard of economy!

Mechanic sets 288 one-by-one inch ceramics at once, perfectly bonded and spaced. He can inspect his work, avoid error, because he installs ceramics face up.

No paper to soak off, no mess to clean. Tile can be grouted immediately! SETFAST ceramic patterns encourage originality in floor and wall design — patterns, geometrics, abstracts, and randoms.

Available from stock, including the famous, exclusive Max Spivak motifs! Send for catalog.

CAN OUR SPECIAL DESIGN STAFF HELP YOU?

Our ceramic artists, headed by Harry J. Macke, will be glad to suggest tile applications to your plans or elevations; or put your own tile designs in layout form,







THE CAMBRIDGE TILE MFG. CO.

P.O. Box 71, Cincinnati 15, Ohio

Send me folders and data on Suntile SETFAST Wall Tile and Ceramics.

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City

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How Mt. Sinai Hospital gains nursing time, cuts foot travel, speeds <u>all</u> services!





audio-visual nurse call system. At Mt. Sinai, Executone's two-way voice communication between patient and nurse cuts nurse's foot travel more than 60%...allows nurse more time for actual patient care.

New York's famed Mt. Sinai Hospital has pioneered in the application of electronic voice communication. Starting 14 years ago with its first Executone Intercom System in the Radiology Department, Mt. Sinai quickly extended the use of this modern, time-saving equipment.

Today, Executone is an integral part of Mt. Sinai, serving the entire hospital. With 325 beds already served by Executone's Audio-Visual Nurse Call System, Mt. Sinai has applied other Executone intercom and sound systems to its many services and departments. Thousands of needless steps are saved daily at Mt. Sinai with Executone—clear, distinct two-way conversations take place at the touch of a button. The over-all result is more personalized patient care and improved administrative efficiency.

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NON-CORRIDOR PAGING. Doctors' paging calls at Mt. Sinai are reproduced at Nurses' Stations—not in Patient Corridors. (Arrow indicates paging unit.)



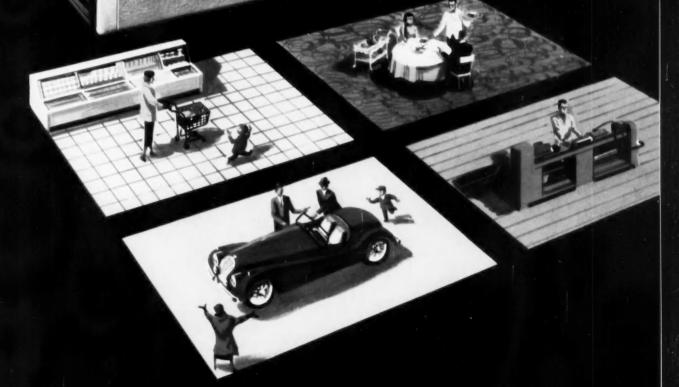
CENTRAL KITCHEN COORDINATION. An average of 6600 meals are served daily. Executione speeds activities with communication between Steward, Dietician, Food Preparation and Serving areas.



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the quality tells...the quality sells





provide fast, clean heat for a variety of applications



Sell and Grow with

ANITROL

Gas-fired Commercial and Industrial Heating Equipment

VERSATILE NEW JANITROL UNIT HEATERS

Remember this about Janitrol Unit Heaters: their versatility and efficiency, combined with low cost, means you can use them to advantage for most every commercial or industrial building.

They save installation time and labor. They do not need expensive duct work. They are completely automatic. They offer convenient "dual fuel" performance—use natural or LP gas; may be switched from one fuel to the other automatically. And

they direct heat where needed only when it is needed—assure top operating economy.

And remember, too, that no other unit heater can match their record for durability and low maintenance. The exclusive Janitrol Multi-Thermex heat exchanger is so enduring that replacements for any cause have been less than \(\frac{1}{6} \) in over two million heat exchanger tubes produced since 1940!

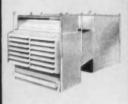
Dependability and economy—these are benefits that only time and experience can bring. Be sure Janitrol Unit Heaters are the choice for your next job.

Fill every commercial and industrial heating need from JANITROL'S broad line . . .



GAS-FIRED DUCT FURNACES

Engineered for installation in a duct where air is circulated by a separate blower. Especially adaptable for use in combination with cooling. Two sizes: 200,000 and 300,000 Btu/hr. input—may be combined to provide capacity from 200,000 Btu/hr. up, in increments of 100,000 Btu/hr. input. Five sizes, from 85,000 to 225,000 Btu/hr. in Duct 55 models.



BLOWER-TYPE

Allows air delivery from greater heights and against greater static pressures. Models with exposed or enclosed blowers. A.G.A. approved as low and high static-type blower unit heater for air delivery to duct system up to 1.0 in. W.C. external static. Heat sections factory assembled. Sizes: 300,000, 400,000 and 500,000 Btu/hr. input.



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Cold air drawn from floor level is heated, filtered and discharged horizontally overhead. Quiet, clean, carefree—ideal for offices, restaurants, stores, labs, etc., requiring a compact unit. May also be connected to a duct system. Six sizes: Rated input from 65,000 to 200,000 Btu/hr.



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For unit heating, central heating and air conditioning. Wide range of standard blowers and motors assures correct air delivery and temperature rise in each application. Factory assembled and tested. Capacities from 250,000 Btu to 1,750,000 Btu/hr. input.



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For suspension overhead. Saves floor space. Compact, efficient, low-maintenance design. May also be used to feed duct system. Sizes from 84,000 to 250,000 Btu/hr. output.

ARCHITECTS, ENGINEERS AND CONTRACTORS INformation Service

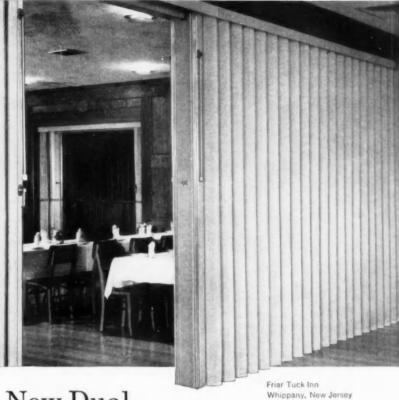
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Also Makers of Surface Industrial Furnaces, Kathabar Humidity Conditioning, Janitrol Residential Heating and Cooling Equipment

separates SPACE separates SOUND



LOOK AT THE ADVANTAGES ONLY THE NEW SOUND-RETARDANT FOLDOOR OFFERS:

Equivalent in sound reduction to the following types of construction materials:







Wood Stud Wall with Metal Lath and Gypsum Plaster

. Minimum space requirements . Easy to operate . No floor guides . Will not bind from slight ceiling sag . Beautiful decorator fabrics . All meeting points tightly sealed . Installed weight is approximately 5.25 pounds per square foot, about half of which is represented by the four dense layers of complementary insulation.

OTHER FOLDOOR PRODUCTS

Look to FOLDOOR for folding doors and partitions to meet every commercial and residential application. Both Multi-V and Multi-X models are offered in a wide variety of fabrics and colors. Full line of tracks, switches and other accessories.

New Dual

Sound-Retardant Foldoor Partition (Patent Pending)

So often, it's not enough to separate space—unless sound is separated, too. That's why the new Dual Sound-Retardant FOLDOOR Partition is first choice for all double-use facilities. It offers the convenience and beauty of the fabric-covered folding door—combined with the practical utility of a general

purpose, maximum sound-retardant partition. And-it operates from overhead tracks. It's another Foldoor first. Find out all about it-soon.

SEND FOR FULL INFORMATION . . . or phone your nearest FOLDOOR distributor now.

FOLDING PARTITIONS AND DOORS

In Canada: FOLDOOR of CANADA, Montreal 26, Quebec

HOLCOMB & HOKE MFG. CO., INC.

1545 Van Buren Street Indianapolis 7, Indiana

Please send me full information on: the new Dual Sound-Retardant FOLDOOR Partition.

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and "linen" luxury with Continuous Cotton Towels



New First American National Bank Building, Duluth, Minn. Architect Thomas J. Shefchik, A.I.A., Duluth. Contractor: Fowler-Veranth Construction Company and Klippen-Holm High a Hillian A PORTINI Miles.

You provide the finest in hand drying facilities AND MORE when you specify continuous towel cabinets.

Low cost installation and service by a linen supplier . . . Reduced maintenance and janitorial costs . . . Elimination of litter, storage and disposal problems . . . Limits fire hazard and plumbing repairs.

Add to this, the fact that you do not

Recessed continuous tower capitals with the modern design of the wash room. (This installation serviced by: American Linen Supply Company, Duluth.)

obligate the owner to any particular service, even when you specify recessed cabinets like the ones pictured above. (Recesses are designed to accept any of a wide variety of cabinets.)

So, why not make sure your clients get the best? Specify the luxury and quality of cotton toweling . . . include continuous towel cabinets in your design.

* Send for this free Planning-for-Cloth kit

Linen Supply

Association of America

and National Cotton Council • 22 West Monroe Street, Chicago, III.

Illustrated, includes specifications for recessed unit and continuous cloth towel cabinets. Write-to Linen Supply Association on your letterhead.



History



P. O. BOX 609 · CORVALLIS, OREGON

"I HAVE BEEN ASKED TO SAY
A FEW WORDS ABOUT
NEW SMITHCRAFT LARGE ELEMENT
LIGHTING . . . "



big fixture to install
on the market!"



ANOTHER SMITHCRAFT FIRST!

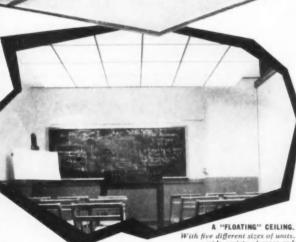
Smithcraft Large Element Lighting
. . . a large area luminaire with POWER-GROOVE Lamps!
For more effective high level illumination in
department stores, offices, laboratories, etc.

Smitheraft large element lighting

The "big idea" in lighting — to fit your own big ideas for the new and different in modern architectural settings! Simplified planning . . . with 5 sizes of preassembled modular units from 4' x 4' to 8' x 6'. Modules are installed individually or joined in both directions, to provide the effect and the utility of dropped ceiling construction at low cost. High level illumination, architectural in form . . functional and unobtrusive. Shielded by Holophane Controlens® #6024, Cubex aluminum $\frac{1}{2}$ "x\\\\^2"x\\\^2\"x\\\^2\" version = 1000 \text{version} \text{plastic louvers, or Polystyrene Plastic dishes.} Fast, simple maintenance and re-lamping.

Write today for the Smithcraft Catalog

Smitheraft Lighting CHELSEA 50, MASS. America's finest fluorescent lighting



with five different sizes of units a wide variety of areas and patterns are possible. Modules have exact dimensions in both directions.

R Holophane Company, Inc.

BRIXMENT MORTAR Is Sound — <u>Stays</u> Sound



In these autoclave tests, neat cement bars were exposed to 295 lbs. steam pressure, 420°F., for 3 hours. Left: The two bars are both Brixment. Note that it is sound—it has not



expanded. Right: The two bars were made of one part portland cement and one part of a lime which does not meet the autoclave test. Note the expansion—proof of unsoundness.

AND <u>SOUND</u> MORTAR IS ESSENTIAL FOR STRONG, DURABLE MASONRY

Some mortars may contain constituents which can cause them to expand or "grow" after long exposure to weather. Such mortar is called "unsound".

The quality of soundness is easily proved by the autoclave test — an accelerated test under great heat and pressure in a steam chest.

Brixment makes sound mortar. It easily meets the autoclave test require-

ments included in Federal and ASTM Specifications for masonry cement.

Soundness is only one of many advantages which have helped make Brixment the most widely-used masonry cement on the market. It will be worth your while to hear all the advantages of Brixment the next time a Brixment salesman calls on you. Or write direct for full details. Address: Louisville Cement Company, Louisville 2, Kentucky.

LOUISVILLE CEMENT COMPANY, LOUISVILLE 2, KENTUCKY

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Here's How to
Get the RIGHT Answer to your
HEAT-EXCHANGE PROBLEMS

The right ratio of surfaces – the right materials – the right velocities – the right proportion between coil area and depth . . . there are dozens of factors that affect the efficiency, maintenance and service life of heat-exchange coils.

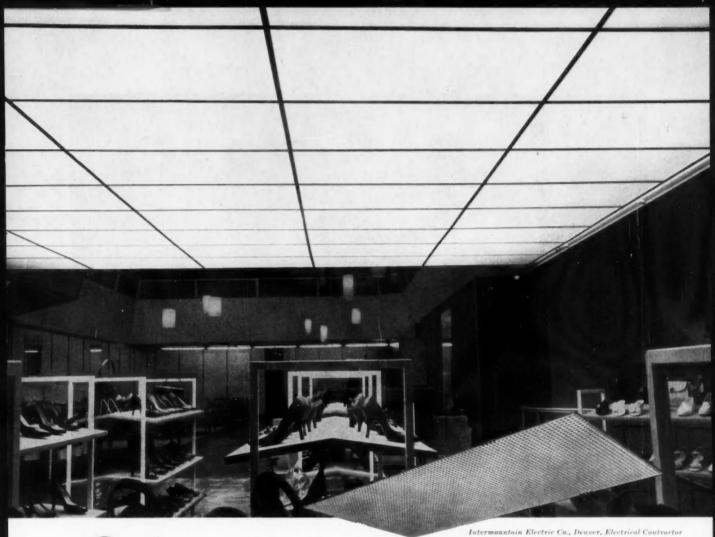
For best performance in your own application, the practical approach is to take full advantage of the unequalled engineering, research and design skill—the unequalled manufacturing and testing facilities—which Aerofin offers you.

To get the right answer - ask the Aerofin man.

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of nationally advertised fan
tem apparatus. List
on request.



Sinko LOW BRIGHTNESS LOUVERS ANSWERED THIS LIGHTING PROBLEM

Illuminating Engineer Carl Schranz of the Newman Schranz Lighting Company, in conjunction with Architect Richard L. Crowther, solved the lighting problem in The Fontius Shoe Store in Denver, in which Sinko Gray-Cell Louvers played an important part.

PROBLEM—To install a drop luminous ceiling with a balcony wall on two sides, and the high ceiling with several conventional fixtures, a 300 foot candle level on the merchandise was desired.

SOLUTION—96" T 17 power groove, cool white lamps in fixtures suspended 30 inches above a luminous ceiling of Sinko's Lo-Brite, Gray-Cell, Plastic Louvers, supported in an aluminum inverted tee, grid system.

RESULT—This unusual treatment was the answer to obtaining the three A's of store lighting . . . attracting the customer . . . easy appraisal of merchandise . . . and a relaxing atmosphere.

You, too, can achieve clean-cut, modern appearance, with minimum maintenance with indestructability by specifying Sinko Thin-Cell Louvers for your jobs. These Louvers reduce surface brightness and increase working level efficiency.

Thin-Cell Louvers offer many advantages—write today for literature describing these advantages in detail.

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Now available: double-hung windows glazed with L·O·F *Thermopane*®

A special *Thermopane* insulating glass — made with *single-strength* sheet glass — is ready for the big building year. Because the two panes are slightly thinner than those used in any previous *Thermopane* unit, this new product is practical for double-hung sash.

Now you can plan and build houses with L·O·F *Thermopane* in every window — and eliminate need for storm sash — a feature clients and home buyers will appreciate.



Thermopane a Great Name in Glass

Made solely in the U.S.A. by

LIBBEY-OWENS-FORD . TOLEDO 3, OHIO

8

REASONS why the seats in that new gym

should be POWER OPERATED BY MEDART

Seats protected by power operation give many extra years of service. The quick smooth opening and closing, controlled by automatic devices, prevents the crashing, joiling and possible damage caused by mantal operation.

I Power operation is practical economy, not an expense. All banging, jamming, general mishandling, normal with manually operated seats, is eliminated thus saving substantial costs for repair and maintenance of seats, walls and floors.

A Medart power operation requires ne expensive floor tracks, no building changes or added wall reinforcing—ne other conditions than are needed for manually operated seats. Only ordinary 110-voit or 220-voit electric source is needed.

3 Median power operation adds only a fraction to the cost of manually operated seats—pays for itself quickly, and continues to return exceptional dividends year after year.

Get the complete story ...

S Power operation is furnished in 2 types. Medat's Bank Mover simultaneously opens and closes all seat sections in line, up to a total length of 112 feet. The Unit Mover permits independent operation of individual seat sections.

MEDART TELESCOPIC GYM SEATS

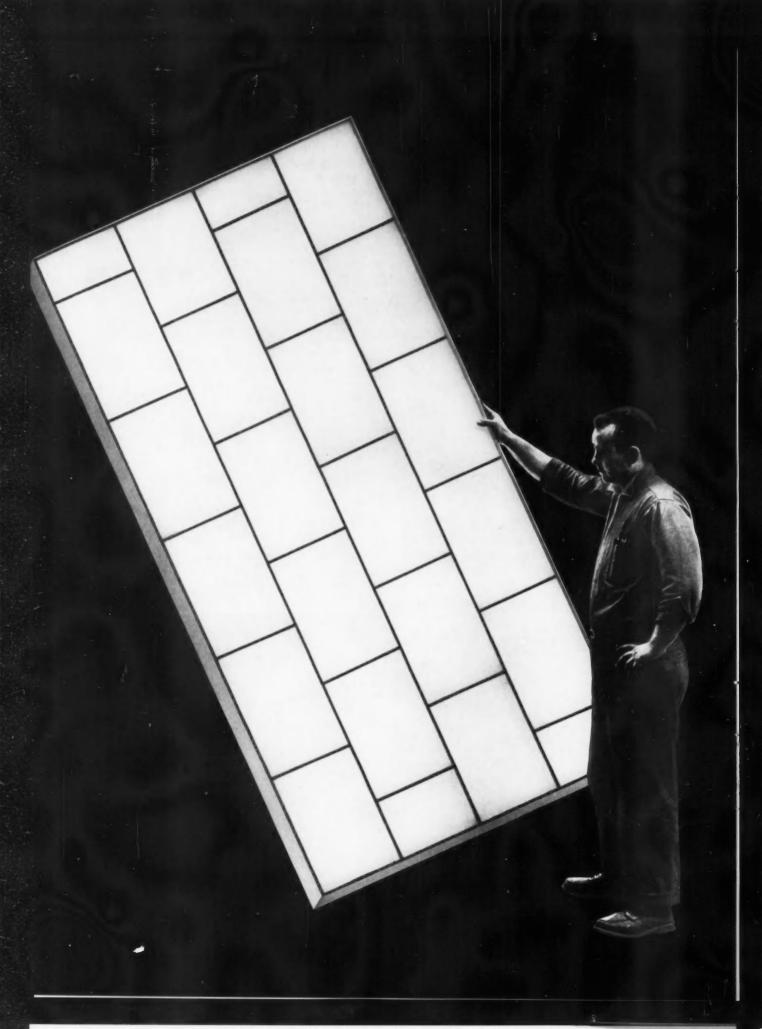
SPECIFY the best, then INSIST on it!

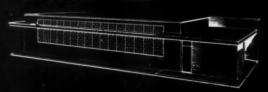
Straight-line travel is an outstanding feature of Medart's power operation. Seats always roll open or closed without danger of binding, "crabbing," damage.

When all seat rows are not required, release of switch key steps motion instantly, leaving only as many rows as necessary opened and locked immovably in residing.

PATENTS PENDING





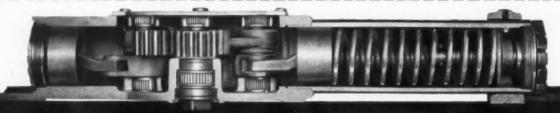




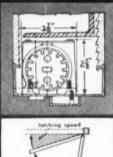
TRANSLUCENT PLASTIC in a STRUCTURAL SANDWICH for new expressions in design

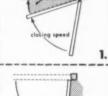
Architectural design is one concept richer with SANPAN plastic sandwich panels. Translucent and rigid, insulating and shatterproof, these units are available in sizes and systems for standard and custom installation. Sturdy gridwork construction of fitted aluminum sections and fiberglass-reinforced polyester skins suit SANPAN for exterior use as well as for decorative treatments within every building type. SANPAN is also produced in many overall colors and varicolored patterns for unusual chromatic effects. For details, write for Catalog 17A.

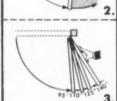
IN A TIGHT LOS AMB?



overhead concealed DOOR CLOSERS









RIXSON

fits in 3" square with room to spare (inside dimension of head jamb)

overall only 2%" x 2%" x 17" long

The most compact of all concealed overhead door closers. Ideal for installations where modern shallow head jambs are specified.

ALL the controls are built-in...

1. two closing speed adjustments

The closing speed from open to approximately 15° is controlled by one adjustment and the latch speed from 15° to closed position by another.

2. hydraulic shock absorber (back check)

At approximately 80° a hydraulic resistance starts to slow down or check the opening action of the door. Hydraulic back check optional.

3. spring cushion door stop

Door is "cushion stopped" at choice of any one of four factory-set positions 95°, 110°, 125°, or 140°. Stop removed for wider openings to 160°.

4. built-in door holder

Where specified—built-in to hold door at choice of 85°, 90°, 100°, or 110°.

Three sizes for center hung and butt hung installations.

THE OSCAR C. RIXSON COMPANY

9100 west belmont avenue . franklin park, ill.

write for full details



DECORATIVE CONTRASTS ARE YOURS WITH CIRCULAR VISIONAIRES®



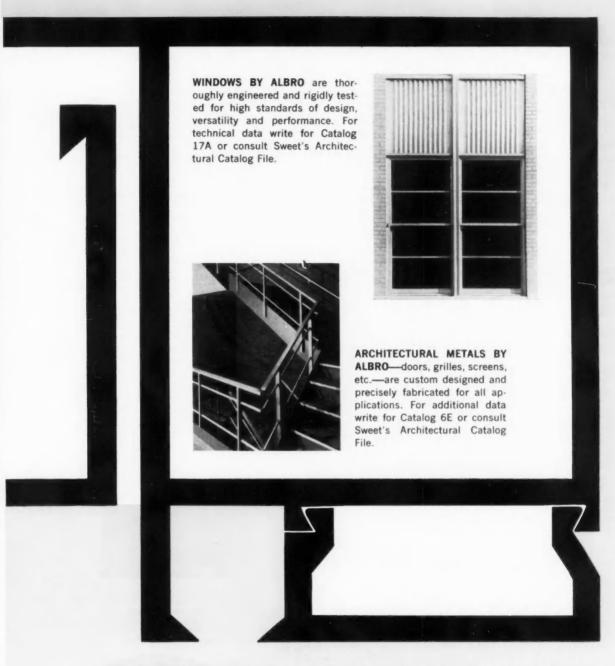
From Massachusetts to California you can see many installations of these contemporary circular Sunbeam Lighting Company Visionaires. Bramatic effects are obtainable by installing these units in various sizes in random patterns. Nominal 2-ft, 3-ft and 4-ft diameters, the CSP3800 Series, as "large area" sources, produce high level, low brightness illumination. They take standard fluorescent lamps. The domed translucent white Plexiglas diffuser opening on concealed hinges, has long-life characteristics assuring minimum maintenance. The smart, circular trim fits flush to the ceiling and the recessed enclosure is square in shape permitting standard installation methods. Write today for bulletin #D51.

SUNBEAM LIGHTING COMPANY
777 East 14th Pl., Los Angeles 21, Calif.
3840 Georgia St., Gary, Ind.



This design is based on a double hung window section through meeting rail appearing in Albro window catalog 17A.

FOR THE ARCHITECT WHO DESIGNS IN METAL



ALBRO will help engineer, then will fabricate and install curtain wall, windows and related metalwork to exact specifications. Equally at home with aluminum, bronze and stainless steel, ALBRO has transformed architectural metal designs into realities for over thirty years. This long tradition for metal engineering know-how allows ALBRO confidently to accept total responsibility over every phase of metal product development.



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a blasting horn
. . . or a complete audio-visual system

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Whatever your problem, simple or complex, our engineers assist in designing the system that best suits your needs. Simply call your nearest Sperti Faraday representative or write Sperti Faraday, Inc., Adrian, Michigan. In Canada, write Sperti Faraday, Ltd., Montreal.

Specialists in: FIRE ALARM SYSTEMS • COMPLETE CLOCK SYSTEMS • HOSPITAL SYSTEMS • PATIENT OBSERVATION (CLOSED CIRCUIT TV) • AUDIBLE SIGNALS • ANNUNCIATORS • CODED PAGING SYSTEM • SYNCHRONOUS CLOCKS • TRANSFORMERS • CONTACT DEVICES



Sperti-Faraday installations include Rockefeller Center, Waldorf-Astoria Holel, Hotel Astor, Hotel Lexington, Walter Reed Hospital, Johns Hopkins Hospital and many others.



VISACALL



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Page-Boy of your Organization



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SINCE 1875 DESIGNERS AND PRODUCERS

OF VISUAL AND AUDIBLE SIGNALS





SERIES M700. This is the newest concept in modern kitchen styling ... built-in units with a "furniture look," as designed for Mutschler by Paul McCobb. This contemporary cabinetwork is made of finest northern maple, finished in walnut (as shown) and in striking modern colors. Leg stanchions are anodized satin aluminum. Series M700 is especially suited for open-plan kitchens, and also may be used for built-in storage throughout the home ... in dining area, living room, den, bedrooms and bath. For modern décor. Series M700 is the answer in home or apartment . . . whether the budget is large or small.

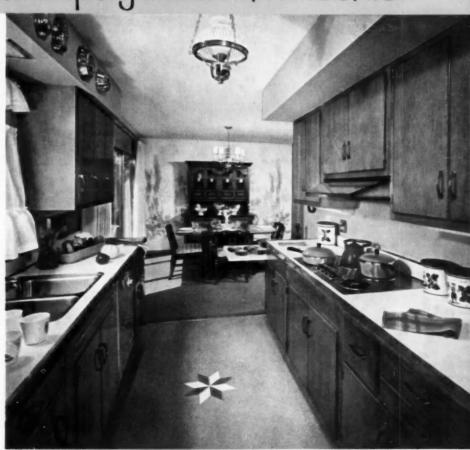
New kitchen stylings from Mutschler

MERIES M500. Mutschler Series M500 kitchens are unequalled for quality and value at reasonable prices. This northern maple cabinetwork of conventional styling is available in many natural grains and decorator colors, with choice of hardware. Period molding on doors and drawers, if desired. Series M500 is extremely versatile as to décor... from Cape Cod to Oriental Modern, and is a wise choice for new homes and apartment buildings, as well as those being remodeled.

To help acquaint builders and architects with newest developments, Mutschler planning specialists offer the experiences of a nationwide organization. These services are available at no extra charge. See your Mutschler specialist or write—

MUTSCHLER Nappanee, Indiana

For complete specifications, see: Sweet's Architectural File 24b-Mut



*ONE MILE OF STRIPLINE (slot type) DIFFUSERS



Architects — Perkins & Will, Chicago, III.

Air Conditioning & Ventilating Contractors — The Robert Irsay Co., Skokie, III.

Installed in Administrative and Research Center INTERNATIONAL MINERALS & CHEMICAL CORPORATION

Skokie, Illinois

STRIPLINE . . . Versatile, Inconspicuous, Practical



all photos by Hedrich-Blessing, Chicago

Stripline slot type diffusers guarantee the greatest possible uniformity of air flow while enhancing the modern architectural design.

Regardless of length of the Stripline diffusers installed, these slot type units provide unvaried distribution of noiseless, draftless, conditioned air. Cold or hot spots are completely eliminated.

Stripline is versatile . . . inconspicuous . . . practical . . . , can be located anywhere to suit the interior design . . . in walls . . . ceilings . . . coves . . . moulds . . . window stools.

For complete engineering data ask for Stripline catalog.

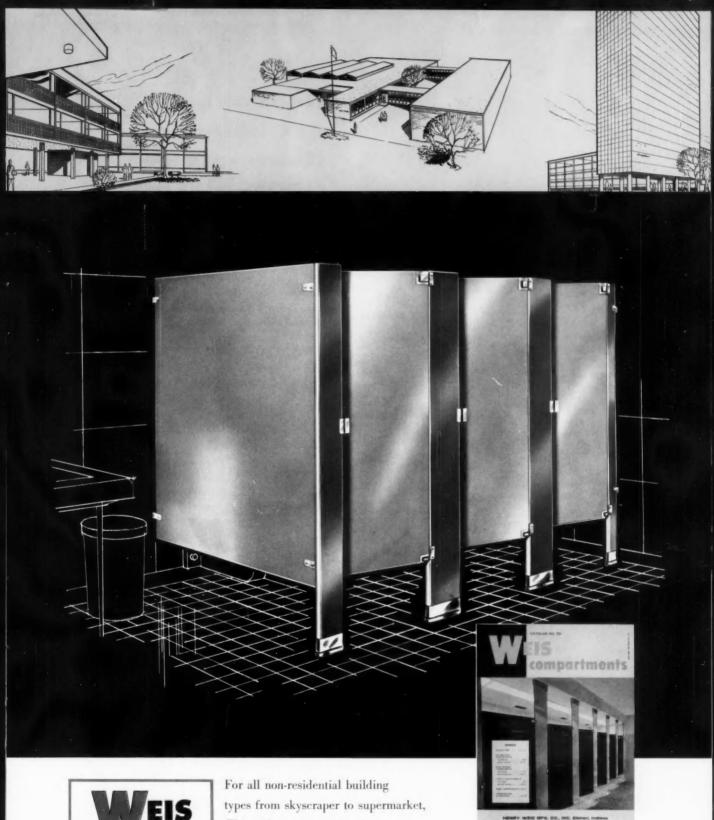




high velocity units • punkah louvres air diffusers • filters • exhausters registers and grilles

Sold exclusively by representatives for:

AIR DEVICES INC.



TOILET COMPARTMENTS

Weis toilet compartments have the construction features, finishes and designs that provide

installations of top value . . . whatever your budget. The advantages of the complete Weis compartment line can readily be demonstrated in your office on request.

WEIS 1959 CATALOG gives com-WEIS 1959 CATALOG gives complete specifications of the various Weis compartments ... Weisart, HI-Stile and Weisteel Panel. Explains construction features. Shows Vitre-Steef lineal porcelain enamel and oven baked finishes . . . in choice of decorator colors. Ask for free file copy.

HENRY WEIS MFG. CO., INC. Dept. 1303 — Elkhart, Indiana

Reflection of Quality in Commercial Doors

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...a 4' x 4' Recessed Unit to complement Sylvania's New Troffer Series

Now at your command—shallow recessed fixtures in 1', 2' and 4' widths to fit all modern ceilings.

Sylvania's new Troffer Series represents completeness in every sense of the word. Three separate housing designs

The advanced features found in Sylvania's Troffer Series—shallowness, concealed hinges and latches, variety of housings and shieldings, snap-up hanger and many others—are typical of the inherent advantages built into each and every Sylvania fixture line.

Take a look at Sweet's Architectural File for a quick review of Sylvania's complete and modern line. Better yet—send for a complete fixture catalog today. Leaf through it and you'll soon discover the wide choice of fluorescent lighting equipment offered by Sylvania.

are available to fit quickly and easily into every type of ceiling construction. You get complete choice of shieldings in both one and two foot widths—and in four and eight foot lengths. Matching incandescent Accent Units allow for pattern lighting or the creation of special effects.

To complement this Troffer Series and to expand the design potential of recessed lighting systems, Sylvania now offers a versatile 4' x 4' shallow recessed fixture featuring the same clean, smart appearance and the up-to-date design advantages which permit simpler and faster installation. This attractive 4' x 4' unit places another distinctive and useful lighting tool in your hands.

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ANGULAR PLANE WALL

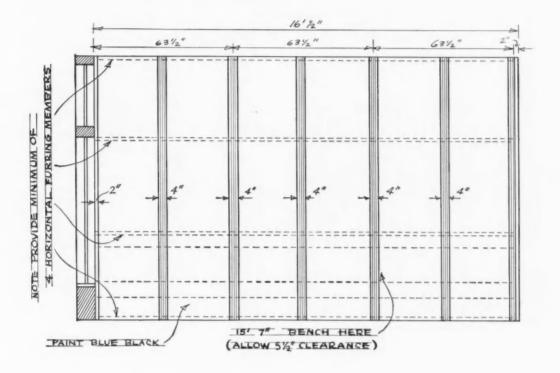
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Formica illustrated: 26-CR-58 Kashmir Walnut 1014 Black Interior by Backus Bros.

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4" sections of black Formica.

The panels were mounted to horizontal furring members with beveled finishing nails through the face.

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Alcoa Aluminum beauty that pays dividends

Economically speaking, this ingenious curtain wall sunscreen facade on the new Public Library in New Orleans is an admirable example of what inspired architects and versatile Alcoa® Aluminum can do to stretch a client's dollars. At a total cost of \$160,000, it reduced solar radiation enough to permit a \$120,000 reduction in air conditioning equipment . . . plus subsequent yearly savings in operation.



BUILDING: Main Public Library, New Orleans, La.

ASSOCIATED ARCHITECTS: Curtis & Davis and Associated Architects & Engineers; Goldstein, Parham & Labouisse, Architects; Favrot, Reed, Mathes & Bergman, Architects; (Sidney J. Folse, Jr., and Waiter J. Rooney, Jr., Associates in Charge of Project), New Orleans, La.

GENERAL CONTRACTOR: R. P. Farnsworth & Co., Inc., New Orleans, La. ALUMINUM SUBCONTRACTOR: Metal Trims, Inc., Jackson, Miss.

Ornamentally, it would be difficult to find a more apt illustration of artistic fitness. The metalwork is an echo of historic New Orleans—a city traditionally rich in metallic, architectural adornment.

Functionally, nothing could be more modern. In the over-all arrangement of Alcoa Aluminum against walls of glass, the ingenious sunscreen admits soft, glareless daylight to all three elevations through all four seasons . . . daily, from dawn to dusk. Alcoa Architectural Gray 2010 reflects light and heat away from the building; Architectural Gray 2030 prevents glaring reflections from bouncing inside.

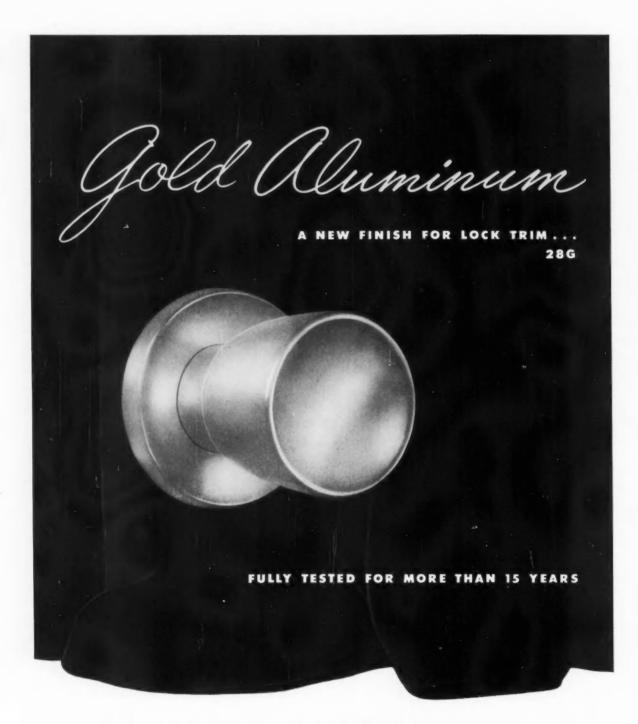
This new and superb modern structure is well worth further study—it's a source of inspiration and practical ideas that may well be applicable to *your* present or future problems. Write for your free copy of the *Alcoa Architectural Achievement File* on the New Orleans Public Library. Aluminum Company of America, 1823-C Alcoa Bldg., Pittsburgh 19, Pa.



... the architect's metal!

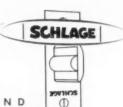
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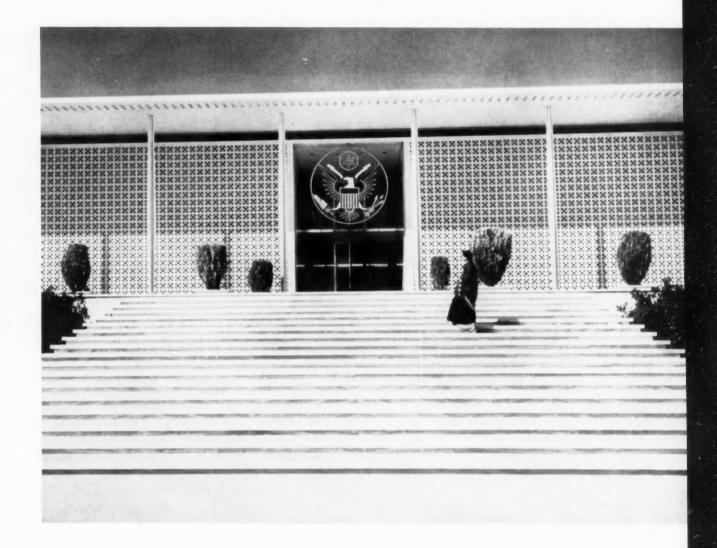


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A M E R I C A'S M O S T D I S T I N G U I S H E D L O C K B R A N D



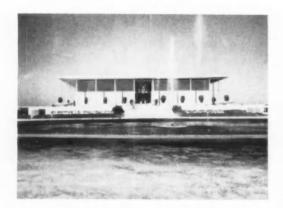
The Work of Edward D. Stone

Completion of a Lauded Project: New Delhi

The shimmering dignity of the recently completed United States Embassy group in New Delhi, India, seems to be amply fulfilling its role, designated by the State Department's Foreign Buildings Operation, of serving as a symbol of friendship and good will. During the two years of its much publicized construction, Eastern and Western skills were combined with great care. Much was done by hand. The grillwork, for example, was cast in foot-square moulds of concrete and marble aggregate, finished and polished by hand. U.S. manufacturing techniques were applied locally, by the builder Mohan Singh, for other items: teak woodwork, aluminum window sash, hardware, lighting fixtures and concrete piping. The result is an elegant merger of the tastes and techniques of the cultures of the two countries.

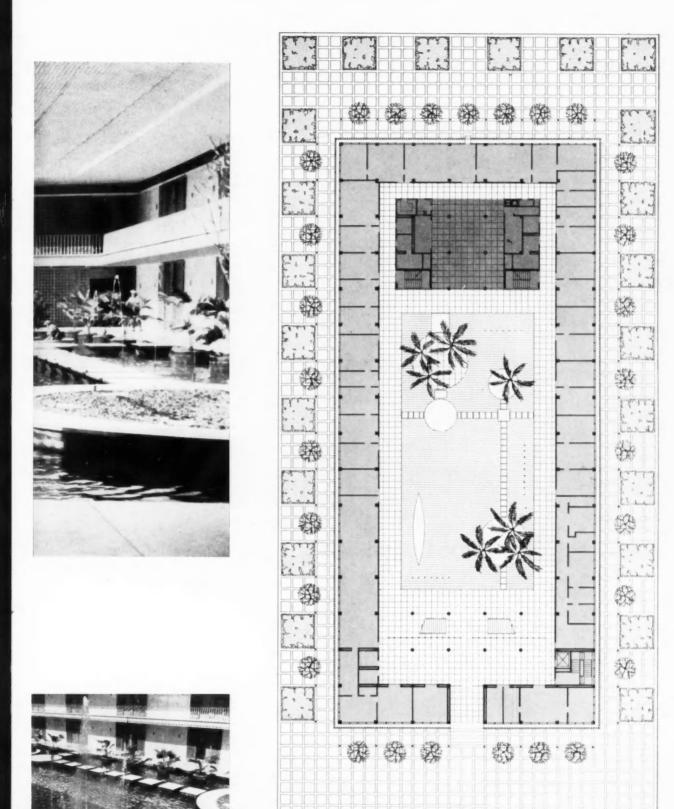


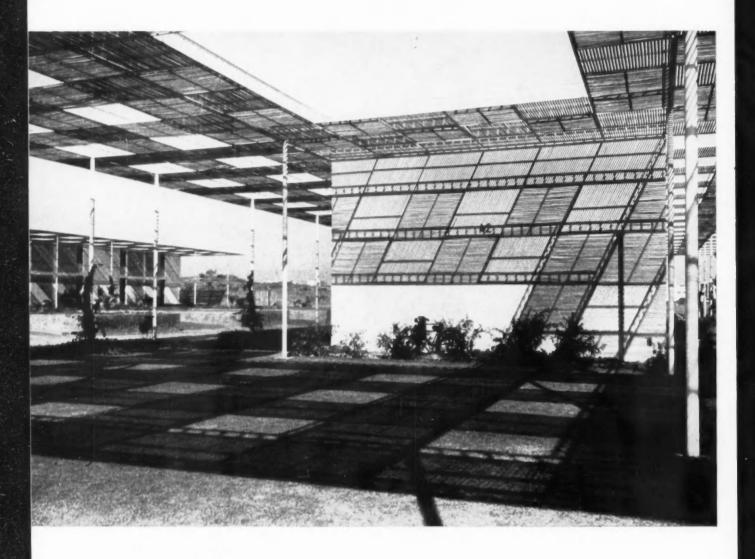
The New Delhi Embassy







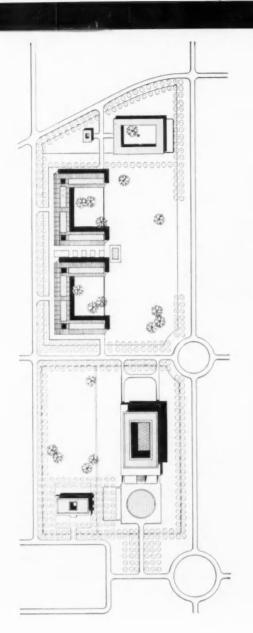




Housing For The New Delhi Embassy

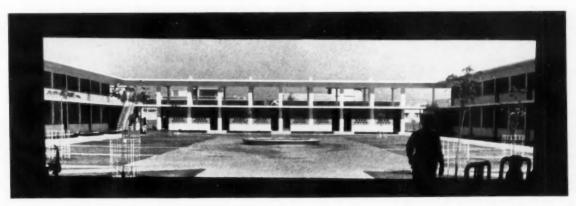
The dominant building of the Embassy group is, of course, the Embassy building itself, resplendently gold, white, and blue-pooled. It is further set off by its podium (which conceals parking). Quieter, but no less attentive to climate and "style," are the housing units for staff and servants at the rear of the plot. All focus on a large central mall. As in the Embassy, the most eye-catching architectural features are the devices used to umbrella and screen the buildings from the intense sun. These become ornament in themselves, and in the patterned shade they project. Similarly useful land-scaping is in its early stages: shade trees, flowering vines. Pools and fountains are widely used.

The Ambassador's residence is at the front left of the plot, to be screened from the Embassy by a large grove of trees.





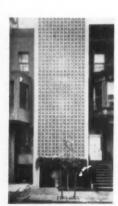






Alexander Georges

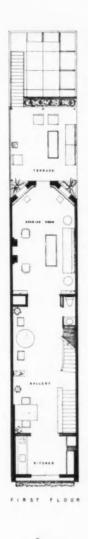
Stone's Remodeled Town House

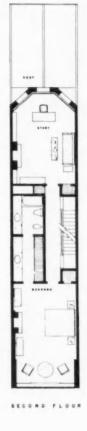


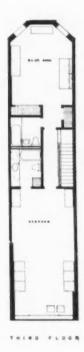
In addition to sun control, Stone derives another virtue from his screening devices—privacy. This New York house, originally a brownstone similar to its neighbors, probably once used tiers of lace curtains to provide a cloistered sanctum. For the remodeling, the façade was stripped away and replaced by a glass wall veiled by a terrazzo grille. It works amazingly well: there is good visibility, light and air, complete daytime privacy.

All interior partitions were removed from the original building, and new plumbing, heating, cooling, etc., were added. The ground floor was arranged as office space for a doctor. The Stones' living quarters occupy the three top floors. Major rooms include: living area (above) and (right) master bedroom, terrace, study.















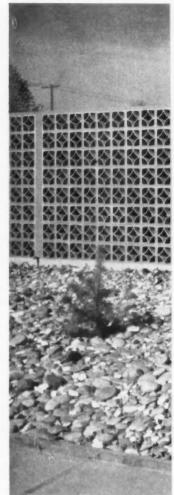




Alexander Georges

The Stones' Own Home

The only original room preserved during the remodeling is the drawing room, which has exuberant 1875 East-lake mahogany paneling. The floor is unified by white marble which runs from kitchen and gallery (bottom photo through drawing room to terrace.



Roger Sturtevant photos











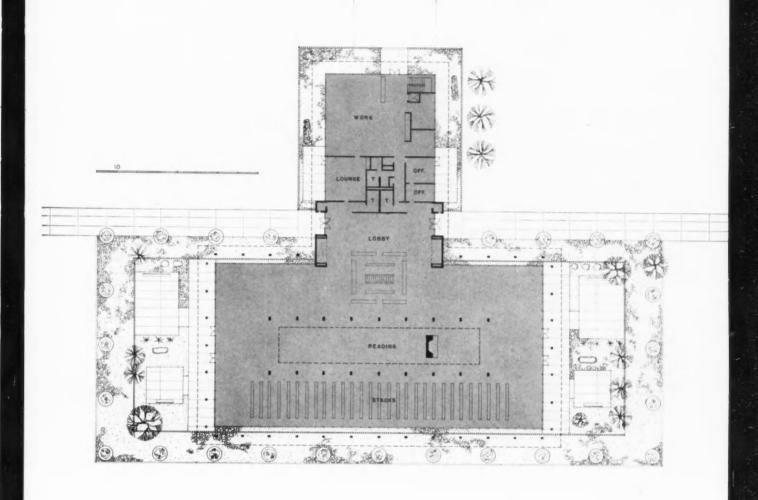
Regional influences are often felt in Stone's work, although he makes wide use of several personalized design idioms in each. This is headquarters for a city library system. The "Pacific Island quality" prevalent on the West Coast is also dominant here: the roof line, the quiet colors, the casual atmosphere and disposition of building masses. The landscaping of Eckbo, Royston & Williams further emphasizes this.

The big, well-lighted interior seats 160, holds 100,000 volumes. Most exterior walls are glass, protected by overhangs and a screen fence, which is extended to form outdoor reading rooms. The attempt to avoid an overly institutional atmosphere seems successful. There are reading and lounge areas of varying sizes, denoted by changes in the roof line, or by folding screens.



Main Library, Palo Alto, California











Mitchell Park Branch Library, Palo Alto

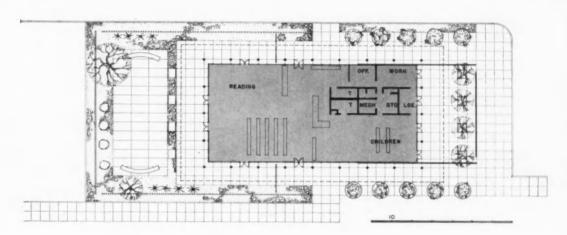
This scaled-down branch of the library shown on the preceding pages, recalls the spirit of the parent-design, but uses simpler masses, lighter colors in keeping with its size. The exterior is redwood, terra cotta grille.

The interior is big and open, with central control. Glass walls permit supervision of outdoor areas, as well as indoor, with a minimum of operating personnel, as was required by the program. Folding screens (visible in photo far right) permit subdivision of the room for study groups and the like.

The landscaping presents some interesting items for simplifying maintenance. Most border areas are "planted" with small, smooth stones, with actual vegetation limited for the most part to raised planting "tables" or tubs. Courtyards are paved, except for the borders.

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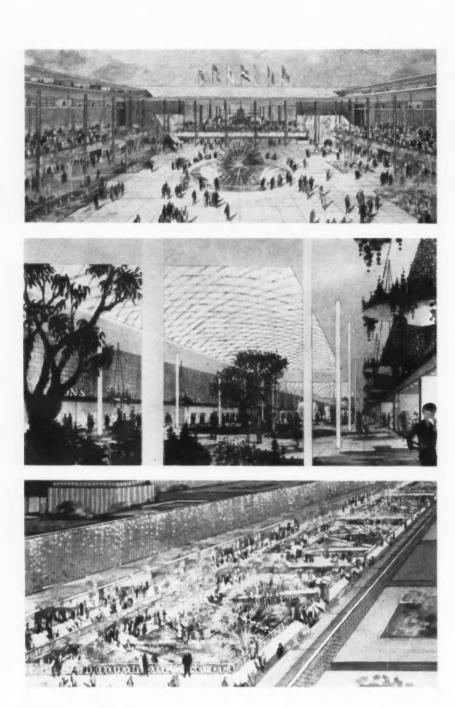
A Program to Revitalize Downtown Akron

A festive air of plazas, fountains and pedestrian ways dominates this thorough-going scheme for the redesign of downtown Akron, Ohio. Plans for building a cultural center, which forms the hub of the area, are actively underway.

Automobile traffic is handled by peripheral arteries around the main area, and intersecting streets below the level of the plazas. The principal mall will be elevated to simplify this. Parking facilities include adjacent surface areas and a three-level underground garage beneath the cultural center. The total area is divided into three "use" districts: retail, civic, and commercial and office. It is planned to remove all obsolete buildings and "rehabilitate" the others. An early scheme for the plaza is top right, a revised one (from the opposite direction) is above.







Downtown Akron

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The basic emphasis of the scheme is the creation of a concentrated regional market. Thus, the Cultural Center (top) is to be built first, to draw large crowds from all over the area. It will contain: a large arena, and a theater-auditorium, with art and exhibition galleries between; a library; indoor sports area; and public and commercial facilities. The fountain is by Richard Lippold. Two variants on the shopping malls are shown below, all planned for eventual glass enclosure. Robert Dowling, of City Investing Co., has joined in the preparation of the plans.



Photographs © Ezra Stoller

DESIGNING AND BUILDING BRANDEIS UNIVERSITY

A Ten Year Development Starting Almost From Scratch

Situated in Waltham, Mass., ten miles west of Boston, the 260-acre Brandeis campus—hilly, rocky, and wooded—presented both a planning challenge and an architectural opportunity when design and development was begun ten years ago. Nearly every building had to lie against a slope; roads for access had to pretty much follow contours. Fortunately, the character of the college lent itself to an informal arrangement—smaller than usual in scale—and college officials wanted modern architecture.

Now, after ten years, there are 37 buildings, and more are being built. The enrollment is 1200—will never be large—and the college is already known for its high scholastic standards. Although it was fi-

nanced by the American Jewish community, Brandeis is conscientiously non-sectarian—a fact the well known three chapels on its campus demonstrate.

The original property—complete with the pseudo-Gothic "castle" (overleaf)—was acquired from a defunct medical college in 1946. Architect Eero Saarinen made the first master plan, designed and built some housing. Following a construction lull of several years—during which the new college was busy building up its faculty, administration, scholastic program, and raising funds—the building program was resumed in accordance with a new master plan prepared by Max Abramovitz, of Harri-



The picturesque old "castle" is now a dorm

The Special Character of Brandeis University

By Dr. ABRAM L. SACHER, President I have often been asked to define the special character of our young university, and the question is a fair one, for we do have American colleges that have developed unique personalities. They cannot offer chemistry or mathematics in any slanted way, yet their character lineaments exist and leave an enduring impact.

I think of Harvard, choice product of the Congregationalist genius. It is no accident that the Harvard noblesse oblige has produced public spirited citizens who have interpreted a Harvard education to mean the obligation of communal service. Van Wyck Brooks' "The Flowering of New England" makes clear the enormous role this spirit has played in every aspect of American life.

The impact of the Quakers on higher education has been phenomenal. This relatively small group has made the building of quality colleges a major corporate objective; and Haverford, Swarthmore and Bryn Mawr are crowning glories. At Swarthmore there is a passion for excellence within a climate of simplicity, of modesty, indeed of austerity, in both action and thought. This kind of spirit has special importance in an Age of Brass with so much emphasis on front and display and the tinsel of advertising superlatives.

The Catholics are responsible for more than 200 American colleges. The finest of these have a tradition of learning and scholarship which makes them prime assets in American life. Special character at Fordham is quickly sensed. Here you find a deep religious reverence; a sharp restraint upon the boundless sweep of pragmatism. There is no lowering of intellectual standards, but reason is mellowed by reverence, and the utilitarian is never permitted to crowd out the sacred.

Ten years ago the Jewish community came into the corporate family of Universities through the founding of Brandeis. We and our children have profited through the years from the generosity of the great Christian founded colleges; it means much to us that we, too, can now make a basic contribution. Hence, we have poured energy and resources into the enterprise, a beautiful campus has grown up, peopled by a select student body and superb faculty, served by fine buildings. Now we ask ourselves whether there has been time—in a short decade—to develop a special character. Harvard means a community of public spirited citizens; Swarthmore means a climate of simplicity and integrity; Fordham means a mystical, reverent spirit. What does Brandeis mean?

If there is one special emphasis here, I would say that it is a highly sensitive social consciousness, the concern for the underdog, the resistance to any kind of discrimination or privilege. Some of it comes from a long prophetic tradition which has woven the passion for social justice into the very warp and woof of life. Whatever the cause, the student body is volatile and very much concerned with rights. The faculty, brought together primarily for its academic knowledge and skills, and with no thought of outlook or temperament, have somehow quickly shown a more than average concern for the preservation of social values. It would be arrogant to suggest that Brandeis alone has this concern. We are privileged to stand with other universities in the forefront of the battle to link truth with justice, and pledge ourselves to this tradition.

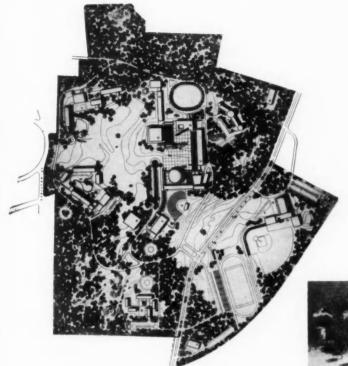
It would be more comfortable to deal with a conforming student leadership; but these youngsters challenge and oppose and question all credentials and sanctions. Jeremiah and Hosea and Ezekiel were probably not easy to live with either, but they were a lot more interesting, and in the long run, a lot more creative and valuable than the custodians of the status quo who preceded and followed them! One asks only that the spirit of criticism be constructive and respectful. Within such limits of good taste we are hopeful that we can bring renewed strength to those forces which think and serve in terms of conscience, remembering that "Distress which is confined to us alone is not distress."

son & Abramovitz, who had meanwhile been appointed Consulting Architect for the university; a post he has held since. Abramovitz has brought in outside architects to design certain buildings while continuing to do others himself. See page 184 for a preview of projects by the various architects, soon to be ready for use. Four of the most recently completed buildings at Brandeis are pictured and described immediately following the master plan shown on page 177.

Regarding the master plan, architect Max Abramovitz says, "Our aim was to preserve the natural qualities of the site—rolling land, rock outcroppings, numerous old trees, and a general elevation higher

than surrounding areas—while avoiding any appearance of formality or the rigid, monumental groupings of large buildings one so often sees on college campuses. Our plan thus developed into a series of intricate clusters of medium-sized and smaller structures designed to function with and complement the trees and hills. A looping road pattern along natural contours links the clusters and units together. Outcroppings remain, and sometimes become elements in the 'landscaping.'

"A red and light gray quality consistent with New England will be maintained throughout the campus by using red brick with fieldstone accents in the construction. They present a pleasant contrast to the





Above, the early master plan—now superseded—designed by architect Eero Saarinen. His rendering of a suggested central campus grouping of library, student union, and humanities building about a plaza surmounted by a bell tower is shown at the right. The upper photo pictures an early residential unit, designed by Saarinen for faculty housing, which is now being used temporarily as a dormitory for male students awaiting completion of the new men's dormitory and dining group, now under construction. Refer to the rendering, bottom of page 184



dull colors of winter as well as the gay colors of a vivid New England autumn and the greens of spring and summer there.

"One of the natural features of the Brandeis site is the large central area hollowed by nature into a huge bowl. We intend to develop this as a central open area about which important buildings such as the library, residence halls, the three chapels, and the science and humanities clusters will rise. These will all be accessible from the main loop road; other groupings can be made later as secondary loops from the main road develop.

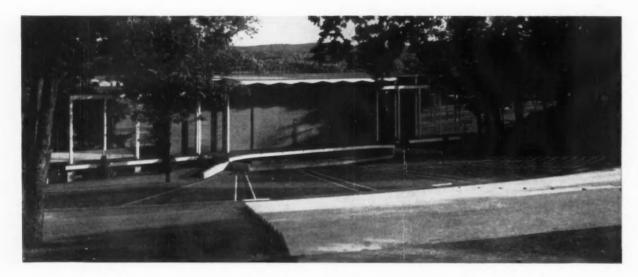
"As the campus and university grow, new vistas can be created within this free scheme. Following

detailed study of landscape design, the basic pattern of the turning vistas in relation to the natural characteristics of the terrain can continue.

"Along with the expansion of facilities will come planned development of parking areas. These special areas will be screened from general view by landscaped walls to minimize the visual unpleasantness of parked cars and bare asphalt.

"We feel that this kind of thinking and planning will give Brandeis University a unique and naturalistic campus pattern that will preserve the beauty of the site and at the same time create an atmosphere conducive to the personal and informal ideals of teaching the university stands for."





The A.I.A. award-winning three chapels-Protestant, Catholic, and Jewish (see ARCHITEC-TURAL RECORD, January 1956, pp 147-153) -and the Ullman amphitheater are shown above. Both of these projects were completed several years ago; both were designed by Harrison & Abramovitz, Max Abramovitz in charge; Bolt, Beranek & Newman were acoustical consultants. For a view of the other face of the 6000-seat amphitheater from on down the hill, see page 173. The stage house and classroom building is of wood construction, with the structure and trim painted white, the cedar siding left natural to weather gray, the large sliding proscenium doors painted vivid blue. The three chapels have exterior walls of red brick, retaining walls and terraces of fieldstone



EXISTING BUILDINGS

- 1. Power Plant
- 2. The Castle
- 3. The 3 Chapels (above)
- 4. Kalman Science Building
- 5. Ullman Amphitheater (above)
- 6. Women's Dorms & Dining
- 7. Old Classroom Building8. Men's Dorms; Future Studios



NEW BUILDINGS

- 9. Stoneman Infirmary (p 183)
- 10. Rabb Graduate Center (p 178)
- 11. Slosberg Music Center (p 180)

12. Mailman Commuter's Center (p 182)



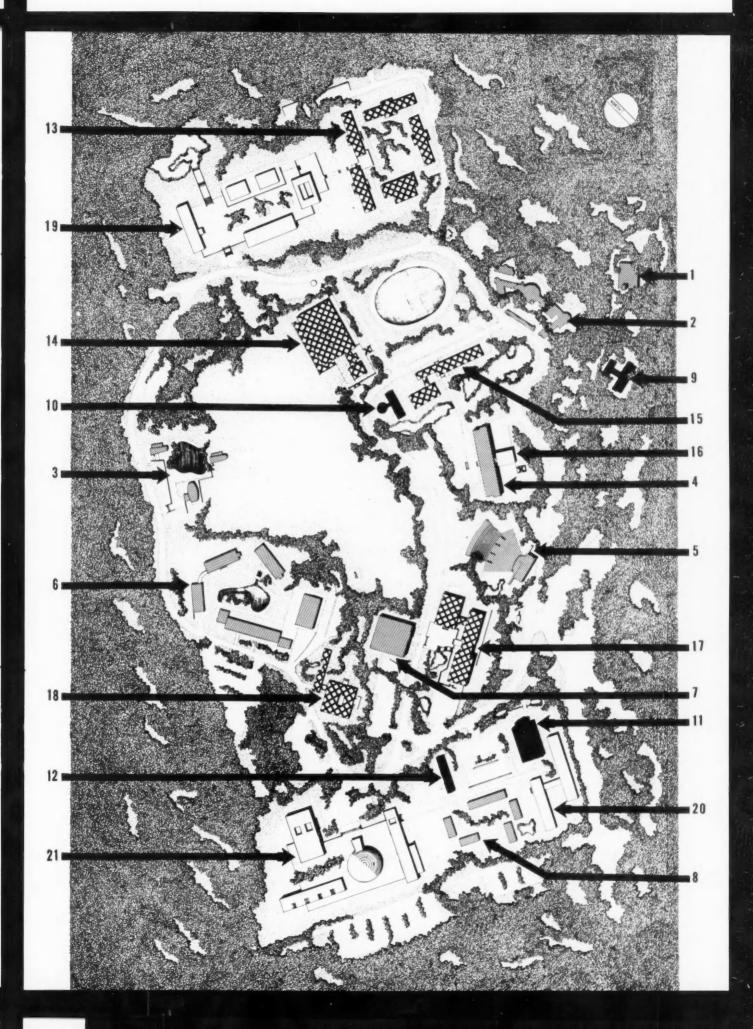
UNDER CONSTRUCTION

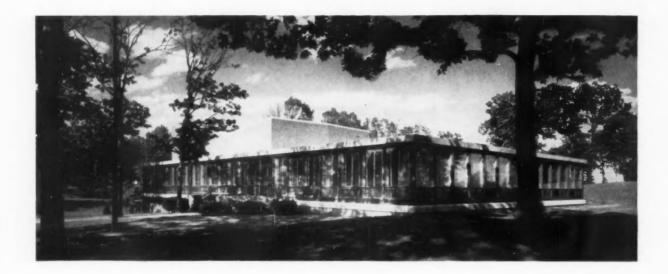
- 13. Men's Dorms & Dining
- 14. Goldfarb Library
- 15. Social Science Center
- 16. Friedland Research Center
- 17. Administrative Center
- 18. Faculty Center



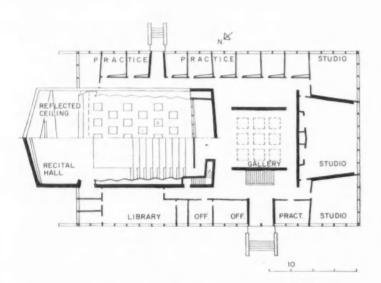
19. Humanities Center

- 20. Creative Arts Center
- 21. Art Museum & Theater





THE SLOSBERG MUSIC CENTER





This 16,700 sq ft structure—which cost \$371,000—serves as the music center and school for the university. In plan, it consists essentially of a strip of classrooms and practice rooms wrapped about three sides of the central recital hall. Future expansion can be accomplished by simply extending the wrap-around strip. The building also houses a top-daylighted exhibition hall—centrally located on the campus—for the display of changing exhibits of paintings, sculpture, etc. The exhibition hall provides, in addition, overflow space for the auditorium.

Max Abramovitz of Harrison & Abramovitz, Architect. Linenthal & Becker, Engineers. Bolt, Beranek & Newman, Acoustic Consultants. Alice Tiebout, Interior Designer. Canter Construction Co., Contractors.

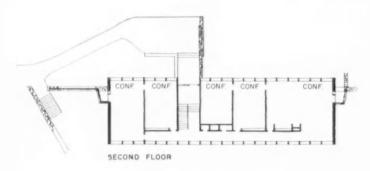


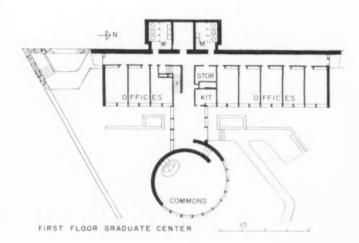
178 ARCHITECTURAL RECORD March 1959





THE RABB GRADUATE CENTER



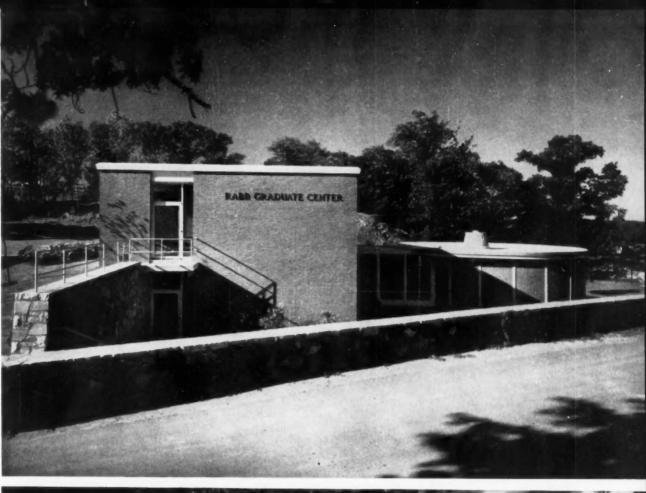


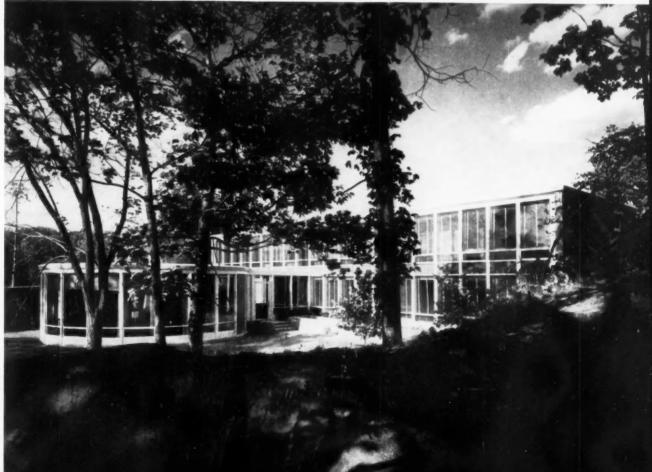
This 8500 sq ft building for the university's graduate school was built for \$220,000. On the upper floor level there are seminar rooms—as pictured below—certain pairs of which can be thrown together upon occasion. On the lower level there are faculty offices and a circular lounge. The lounge, which contains a fireplace and is comfortably furnished, is used by graduate students for relaxation when not otherwise in use for meetings, parties, informal talks by visitors, etc.

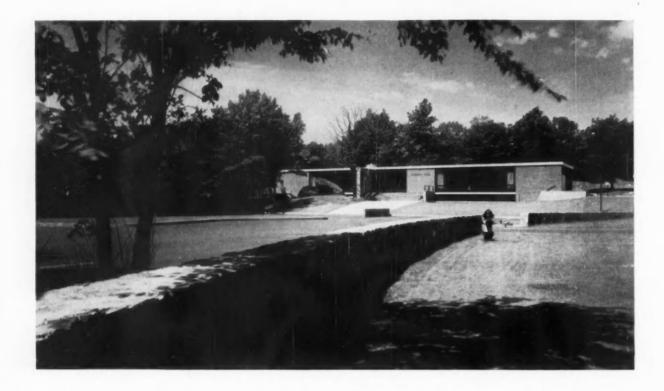
The steel-framed building has walls of red brick, fenestration of painted steel, retaining walls and terraces of fieldstone, acoustic ceilings, and rather extensive interior walnut paneling.

Max Abramovitz of Harrison & Abramovitz, Architect. Linenthal & Becker, Engineers. Alice Tiebout, Interior Designer. Lilly Construction Co., Contractors.

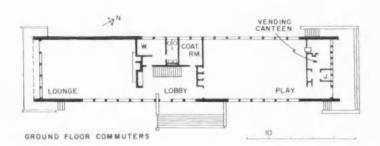








MAILMAN HALL COMMUTER'S CENTER





This 6550 sq ft structure, which cost \$190,000, serves as a center for day students and is thus located adjacent to a large parking area. The building contains two large lounges, a coin-operated canteen, and lockers for the commuters.

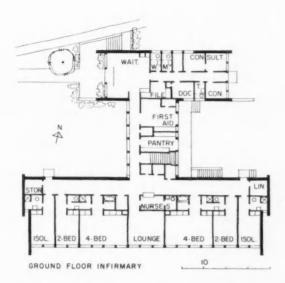
The structural steel frame is enclosed by walls of red brick and fieldstone; interior wall finishes are plaster or wood paneling; ceilings are acoustic tile; floors are vinyl tile.

Max Abramovitz of Harrison & Abramovitz, Architect. Linenthal & Becker, Engineers. Fritz Construction Co., Contractors.



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THE STONEMAN INFIRMARY

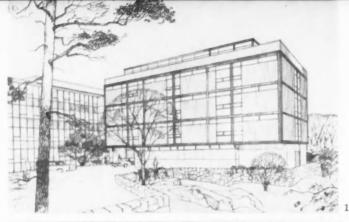


The university infirmary, which provides outpatient as well as hospital bed care for ill and injured students, was built at a cost of \$150,000. The H-shaped building contains a patient and visitor lounge, clinic, four consulting suites, first-aid treatment room, laboratory, kitchen, and beds for 16 patients. There are two isolation rooms.

The exterior walls of the steel-framed building are red brick; retaining walls and terraces are fieldstone; interior walls, partitions, and ceilings are painted plaster; floors are asphalt tile.

Max Abramovitz of Harrison & Abramovitz, Architect. Eipel Engineering, Structural Engineers. Sears & Kopf, Mechanical Engineers. Linenthal & Becker, Utilities Engineers. Keystone Construction Co., Builders.











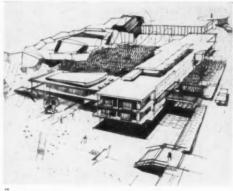




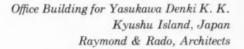
Brandeis University

Buildings now under construction or very soon to be:

- 1. The Friedland Science Research Laboratory; Shepley Bulfinch Richardson and Abbott, Architects
- 2. The Goldfarb Library; Max Abramovitz of Harrison & Abramovitz, Architect; Dr. Keyes Metcalf, Library Consultant
- 3. The Men's Dining Hall; Max Abramovitz of Harrison & Abramovitz, Architect
- 4. The Faculty Center; Max Abramovitz of Harrison & Abramovitz, Architect
- 5. The Administration Center; Hugh Stubbins and Associates, Architects
- 6. Men's Dormitory Group and Dining Hall; Max Abramovitz of Harrison & Abramovitz, Architect
- 7. The Morris Brown Social Science Center; The Architects Collaborative, Architects

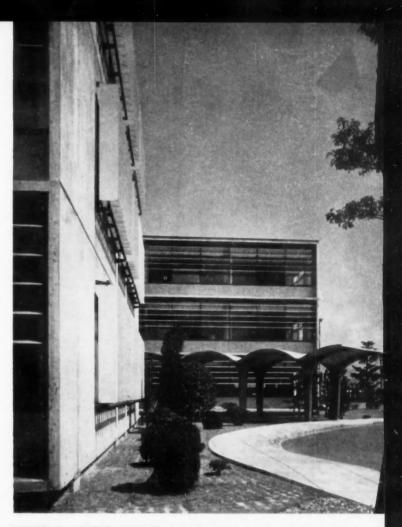


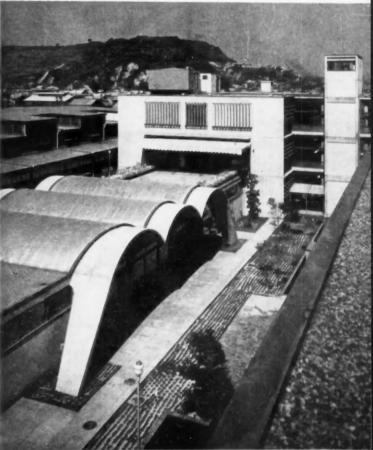
Weather Hazards Influenced This Design



In addition to the usual considerations of esthetics and utility, the character of the prevailing weather weighed heavily in the design of this office for Japan's largest manufacturer of electric appliances and equipment. Both this office building and the company factory are located on Kyushu Island, which is occasionally mauled by 150 mph typhoons, and is in a major earthquake belt as well. The typhoon hazard necessitates a horizontal wind pressure design component of 60 lb per sq ft; the possibility of quake requires the tying together of the entire structure.

This attractive building—of concrete cast in place—is braced laterally by 6-in. concrete shear walls (serving as partitions) and braced also by the spandrel-to-sill panels. All footings are tied together by a system of grade beams and struts. Architect Antonin Raymond says the structure is built in such a manner that the entire building could be tipped on its side and suspended by a giant chain and would still continue to retain its shape and rigidity without apparent distortion.





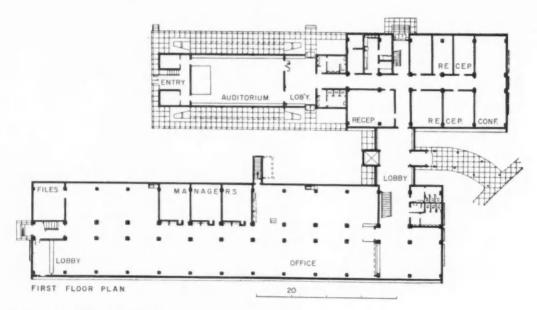




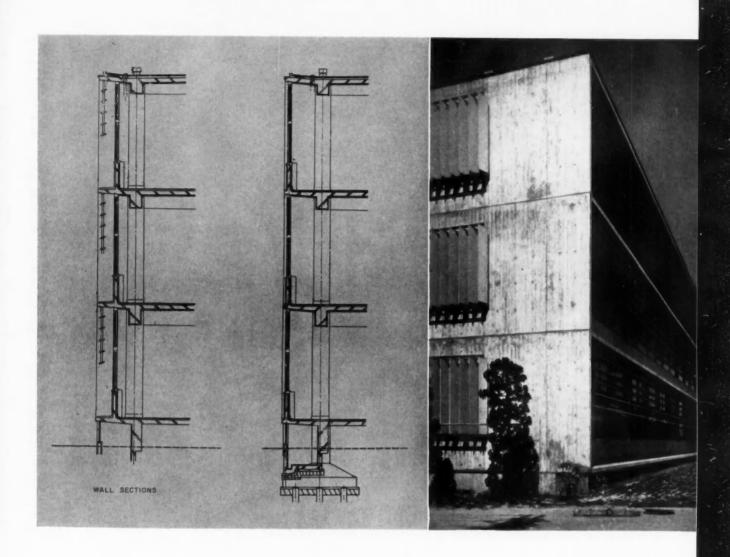
Yasukawa Office Building

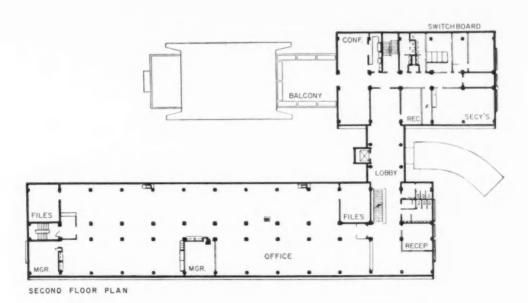
Kyushu Island—locale of the building—is devoted in large part to industrial plants and worker's homes; which means that the outlook is not the most favorable. The situation influenced the plan, which is a typical Japanese fenced-compound arrangement that looks inward upon a garden and pool.

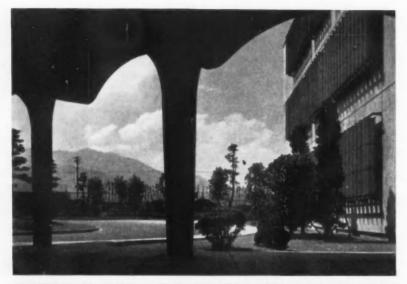
Sun control devices—highly desirable since the building is not air conditioned —are of two types; both consisting of fixed louvers made of painted metal. On south façades the louvers are horizontal; to the east and west they are vertical; there are none to the north. Refer to the wall sections at right, which also show the manner in which the columns are set inside the glazing plane



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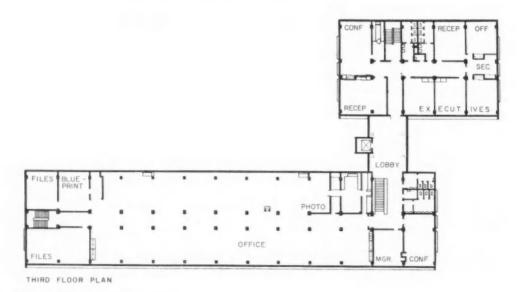


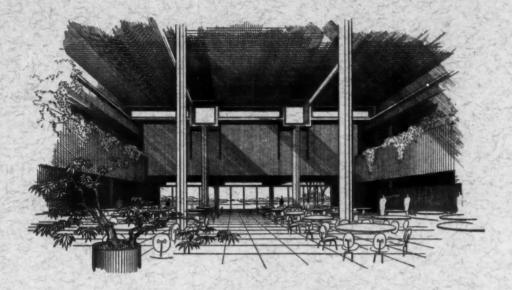
Yasukawa Office Building

The top picture, taken in the shelter of the entrance canopy, reveals how planting has been used within the compound to ameliorate the otherwise fairly grim outlook. The graceful canopy (see also page 185) is of concrete, superbly molded and finished as a result of the highly skilled carpentry available in Japan for formwork.

The auditorium (lower photo) is enclosed within a series of thin shell vaults, 3 in. thick at their apices.

Materials and finishes: structural columns remain natural concrete; otherwise interior walls and ceilings are furred and plastered (or paneled) to furnish condensation damproofing and an air space for thermal insulation. Floors in public spaces and corridors are terrazzo; others are rubber tile. Ceilings are acoustic plaster; wall paneling, as it occurs, is of natural finish shioji wood (scrub oak). All materials and equipment are Japanese



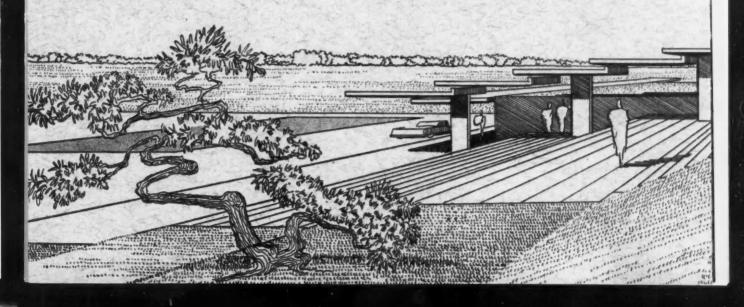


SARASOTA HIGH SCHOOL

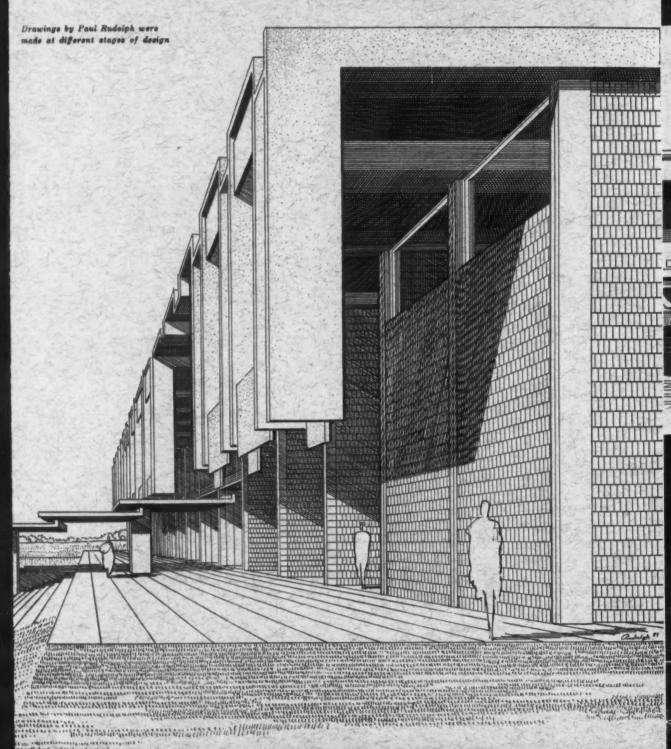
LOCATION: Sarasota, Florida ABCHITECT: Paul Rudolph

STRUCTURAL ENGINEER: Sidney Barker
MECHANICAL ENGINEER: Charles T. Healey
CIVIL ENGINEERS: Smally, Willford and Nalven

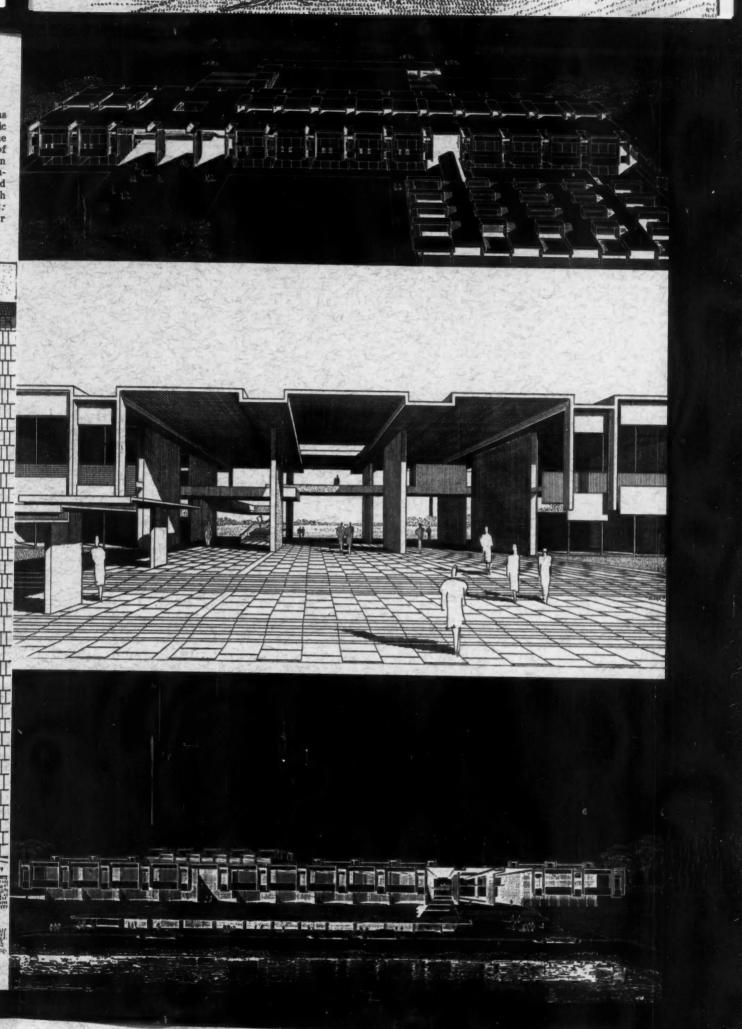
Construction has begun on the first phase of this high school for the Sarasota Board of Public Instruction. It shares a 67 acre site in the geographic center of town with a high school which it will eventually replace, a junior high school and a grammar school. The present phase, shown at top and bottom right, includes classrooms, music facilities, a cafeteria and gym. In the future, administrative facilities, an auditorium, library, additional classrooms and increased parking will be included. (See plot plan overleaf) Above: cafeteria interior is composed of nine bays three rows deep. The second floor has been omitted over the central row of bays to give height and spaciousness to the large room. Center right: the entrance is also two stories high and the second story classroom corridor becomes a bridge at this point connecting the classroom element on one side of the entrance with practice rooms which overlook the band and choir rooms on the opposite side. Corridor, bridge and practice rooms as structures within a structure express the design theme.



Below: main entrance stairs are partially covered by a canopy which adjoins a long narrow roof sheltering the bus unloading area. All vehicular traffic is on the lower level to allow a clear view of the relationship between the building and ground. The building has been placed on the highest portion of land with all major rooms facing north or south, the ideal orientation in Florida to catch the maximum amount of daytime breezes. The fixed sunshades of precast white concrete establish the character of the north and south façades. All concrete will be left exposed except the areas sprayed with acoustical plaster. A white concrete brick is used for infilling walls. Right: gym roof appears in foreground. Behind it from left to right are the choir and band rooms, the two story entrance, classroom element and cafeteria.

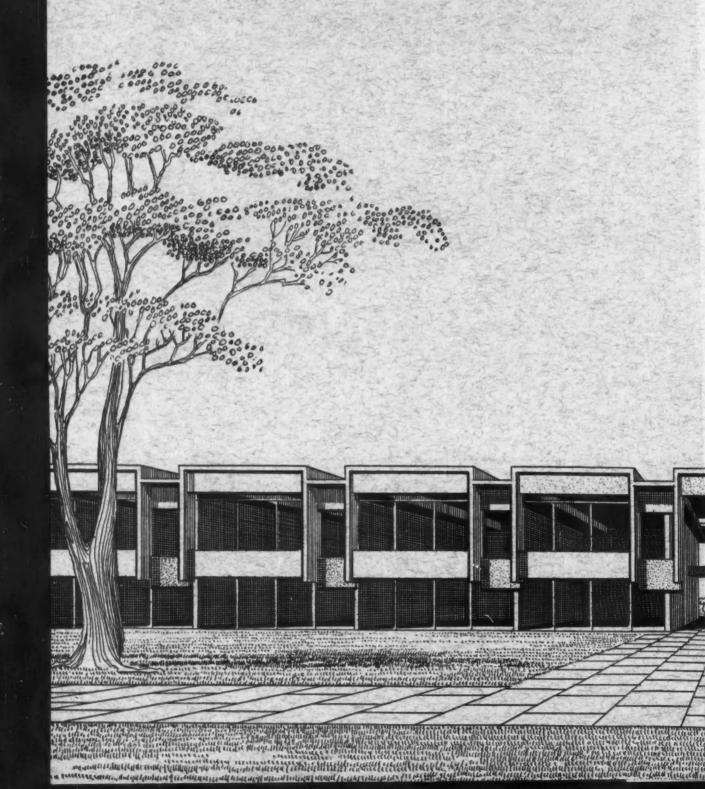


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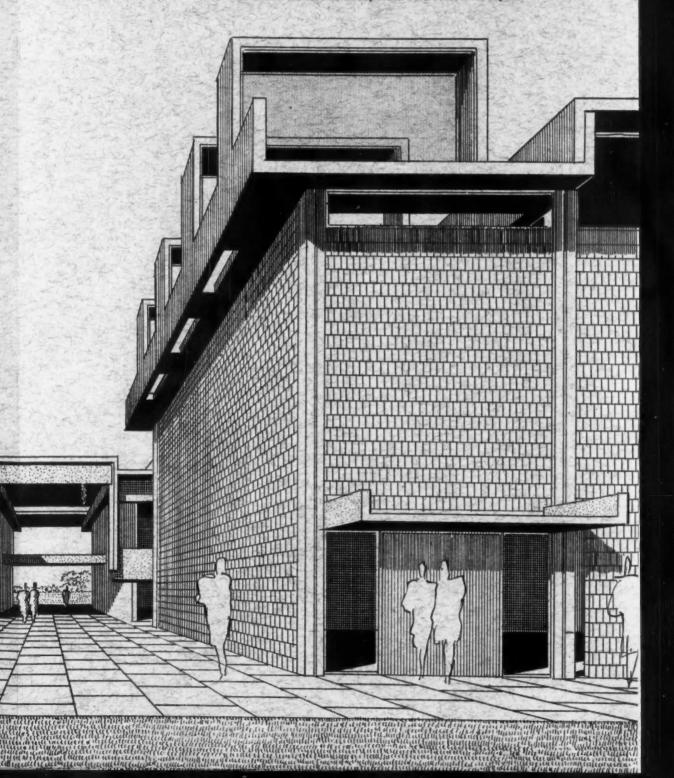


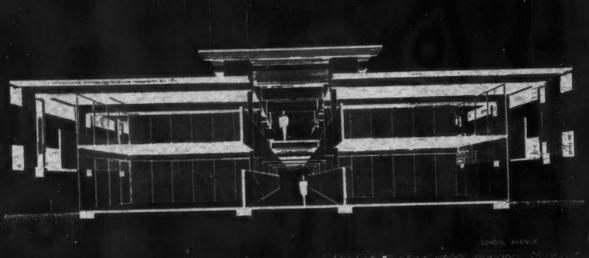
"An effort has been made in this building to make the mechanical space eloquent and integrated into the whole, rather than an appendage cutting the pure structure indiscriminately. Mechanical systems should not render our buildings like Swiss cheesa."

PAUL RUDOLPH



The section at top right and the diagram below make clear that in this building problems of natural lighting and ventilation have been the prime determinants of the architectural form. The second floor corridor is separated from classroom walls by generous air spaces in the floor which ventilate it, and provide cross ventilation for classrooms on both levels. These voids enable light from the roof monitors to penetrate the lower corridor and the corridor side of the classrooms. No direct sunlight penetrates the building. Student lockers define the edges of these floor openings. The building 'breathes' through a series of diaphragms in the roof and second floor set between the double beams which form the sides of the mechanical space in each structural bay.













BUILDING TYPES STUDY 268

Buildings in this study go far to illustrate what federal hospital authorities were thinking about, years ago, when they planned the Hill-Burton program and directed it first of all toward rural communities. Most of these buildings are just such hospitals as they might have visualized: modern, well planned, well-equipped health plants where good hospital care is not only possible but in fact inspired. So many communities in rural sections had no hospitals at all, scarcely dared think of having really good care locally available. Doctors, at least in special fields, had no facilities, no inducement to enter practice in those remote areas.

Now the program has come to fruition in many outlying towns and counties, as these buildings stoutly assert. They are good hospitals, based generally on planning criteria developed by the Architectural and Engineering Branch, Division of Hospital and Medical Facilities, Public Health Service. Local architects have designed the buildings, have used their own ingenuity in interpreting criteria and meeting individual problems.

One is encouraged to note that such hospitals seem to be a bit more assertive than earlier groups in the architectural expression of the hospital necessities. If some critics would be inclined to find them perhaps too efficient-looking, too preoccupied with their shiny new techniques, their calculated stepsaving measures, not expressing the sheltered sympathy a patient might lean toward, well, so it goes in this scientific world. Maybe if skilled psychological surveys could develop just what people in general demanded of hospitals it would tend toward the scientific, not the handpatting. At any rate, these are very representative hospital buildings, and one should have to say, not at all bad.



A P I photos

A Clean Little Hospital for an Air Force Base

Hospital for Blytheville Air Force Base, Memphis, Tenn. A. L. Aydelott and Associates, Architects and Engineers

Here is an exceptionally clean little hospital, clean architecturally as well as medically. As an air force base hospital it is not, of course, substantially different from any general hospital of comparable size, since it serves a total community at the base. Present capacity is 25 beds, its chassis being large enough for expansion of the hospital to a 50-bed capacity. The expansion would be accomplished by just filling in the outlines of the plan at 25-bed stage; most of the additional bed capacity would be in eight-bed wards added onto the present ward unit. Main plan of the hospital portion would not be changed importantly, if at all, most of the rest of the growth needed being in offices, dining facilities, storage and so on.

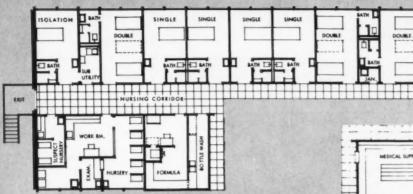
Architecturally the design makes much of a system of wall panels, with essentially two types of materials. Main window wall panels are prefabricated of enameled iron; end walls are of cavity wall

construction, outside wythe of 4-in. hard burned clay brick; inside wythe lightweight concrete block.

The building is set on concrete footings and suspended concrete slab on concrete piers, beams and grade beams. Interior partitions are of metal lath over steel studs and glazed structural facing units. The roof is 3-in. vermiculite slab over steel joists supported by steel column and beam frame.

Inside the typical floor and base is of vinyl plastic, the walls and ceilings are plastered, with noncombustible acoustical tile on many of the ceilings. Special floors, bases and wainscots are of ceramic tile. Doors have metal bucks and wood doors.

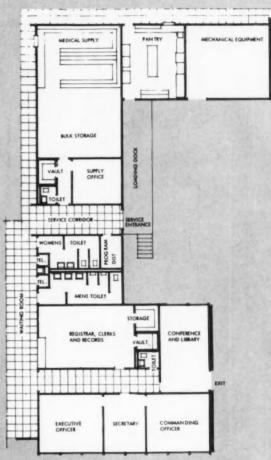
The building is air conditioned throughout. The central core area has a combination forced warm air heating and air conditioning system supply ducts above furred ceiling, returns in crawl space below the floor. Outside rooms have unit ventilators below the windows at outside wall with a system of hot water, chilled water piping providing hot water for heating in winter and chilled water for cooling in summer weather.



A NURSING UNIT (PRIVATE & SEMI - PRIVATE)



Above is the nursing unit of the 25-bed scheme, that is, the private and semi-private rooms and the nursery; there is also, in the top wing of the diagrammatic plan, the start of the ward wing, containing at present two four-bed wards and one eight-bed. At the right is the administration and service wing of the 25-bed scheme; and at the bottom the out-patient and adjunct facilities section, also of the 25-bed stage. Operating suite and delivery suite, plus central sterilizing, take up the space between the out-patient department and the nursing unit shown above



B ADMINISTRATION AND SERVICE 25 BED STAGE





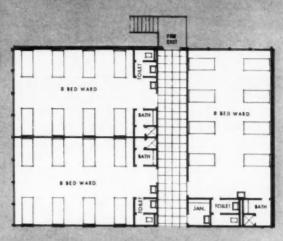




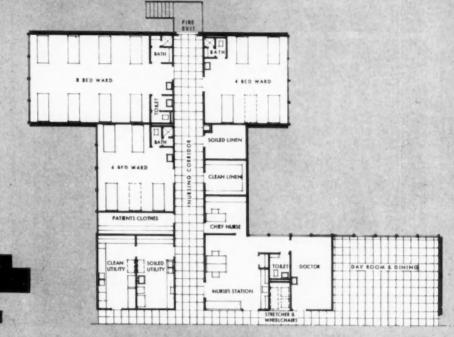
Hospital for Blytheville Air Force Base

Upper left: main window walls are of prefabricated enameled iron panels set in steel sash frames. View shows main entrance, which opens in bottom of the plan diagram at outpatient department. Center view looks into main operating room, also into scrubup alcove. Lower view at left shows the ear, nose, and throat operating room, audio room at right of the photograph

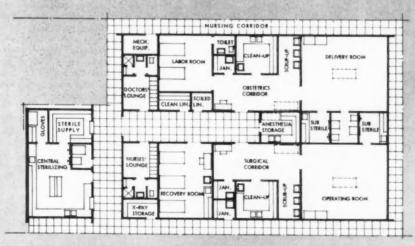
Opposite page: plans at upper part show the ward section of the plan at both the 25- and 50-bed stages. The three eight-bed wards to be added in the expansion would virtually double the capacity of the hospital. Plan at bottom shows an interesting scheme to combine the operating suite and the delivery suite in one unit and yet to keep them isolated from each other for aseptic control



D NURSING UNIT (WARDS) 50 BED STAGE

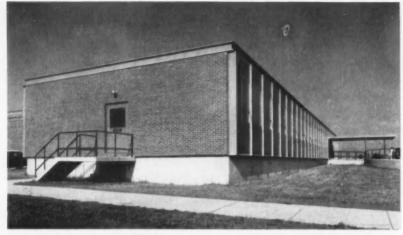


E NURSING UNIT (WARDS) 25 BED STAGE



F SURGICAL AND OBSTETRICAL SUITES

KEY PLAN



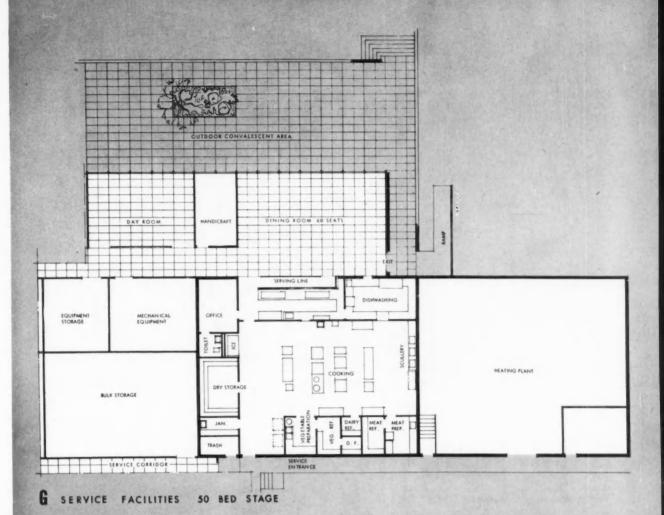




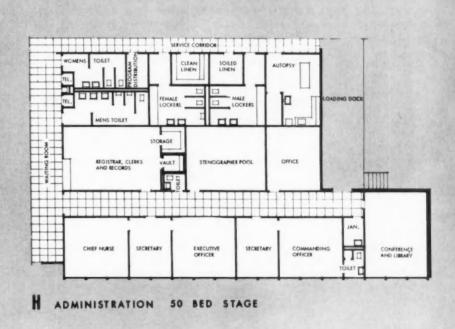
Hospital for Blytheville Air Force Base

Upper left: end walls are of cavity wall construction, exterior panels of hard burned brick. They are neatly enclosed by enameled iron fascia and end of panel walls, to join well with window wall panels. Left center: view of central sterilizing room, shown in plan on preceding page. View in lower left shows utility corridor behind examining rooms in the flight surgeons suite

Opposite page: the plans shown here take a couple of the service areas to the 50-bed stage. The dining room fills in an area of the earlier stage plan left empty and involves some arrangement of the boiler room for the kitchen. The new office portion at the bottom of the page represents a considerable expansion of offices, addition of the library-conference room, plus morgue and record storage



KEY PLAN





Large General Hospital with Several Innovations

Wadley Hospital, Texarkana, Texas. Page, Southerland & Page; Reinheimer & Cox, Associated Architects; Gordon A. Friesen Associates, Hospital Consultants; B. Segal, Mechanical Engineer; Frank B. Johnson, Mechanical Engineer; Montgomery & Williams, Civil Engineers; Boner and Lane, Acoustical Consultants

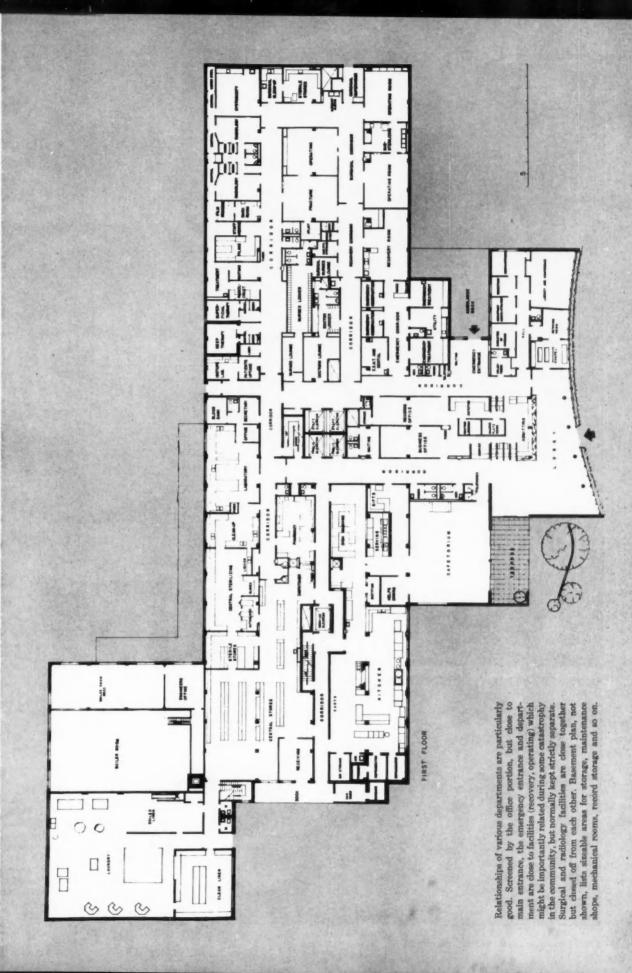
Here is a hospital that will justify close study. Circulation and departmentalization problems are exceptionally well worked out, to separate different types of traffic, to isolate hospital units by types of activity, and to protect certain departments from invasion by people and germs. Also the hospital has a number of innovations: a psychiatric section; a central control and dispatching system for all hospital supplies; a 50-bed nursing unit arrangement in a double-corridor scheme.

The hospital is now a 180-bed facility, expandable to 300 beds by the addition of new nursing floors. It replaces an old 50-bed hospital, which will be converted into a long-term convalescent unit to be operated along with the new hospital.

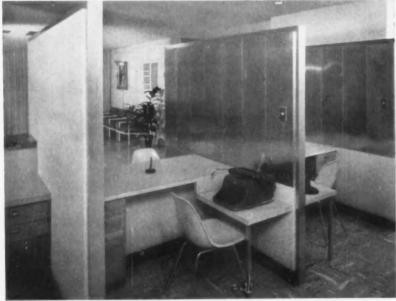
As for the general scheme, the first floor is expanded to contain most of the heavy-traffic areas, adjunct facilities and operating suite. These disparate types of areas are well separated and grouped. Notice especially the separation of public and staff elevators and corridors. A visitor can get to an upper floor room without seeing anything more distressing than a few offices, gift shop or "cafetorium" and staff personnel are free to go their own ways without interference from wandering visitors. Upper floor corridors are also arranged (with the help of the double-corridor plan) to keep working areas bunched together and isolated. First floor plan divides roughly in half, with kitchen, stores, laundry and such at one end, medical facilities at the other. Laundry and boiler room are nicely banished in a rear projection. Above the first floor the building reduces to the dimensions of a 50-bed nursing unit, plus some special department on each floor: delivery suite, nursery, pediatric unit (on third floor, plan not shown), and psychiatric nursing unit. Elevators are so placed that one end of each floor can be cut off for these special facilities, reachable by staff elevators but not by public ones.

On the first floor plan, between pharmacy and stores, is a dispatcher's office, central focus of a supply control system developed by the hospital consultant. This office is staffed round the clock, and the dispatcher is responsible for all supplies for all areas. Deliveries are by tube system, dumbwaiter or cart, normal deliveries being made in light-traffic hours.

The psychiatric section represents a forward step, particularly in this community. There is no mental facility within 75 miles, and only after inclusion of this section in the plans was it possible to induce a psychiatrist to locate in the community.



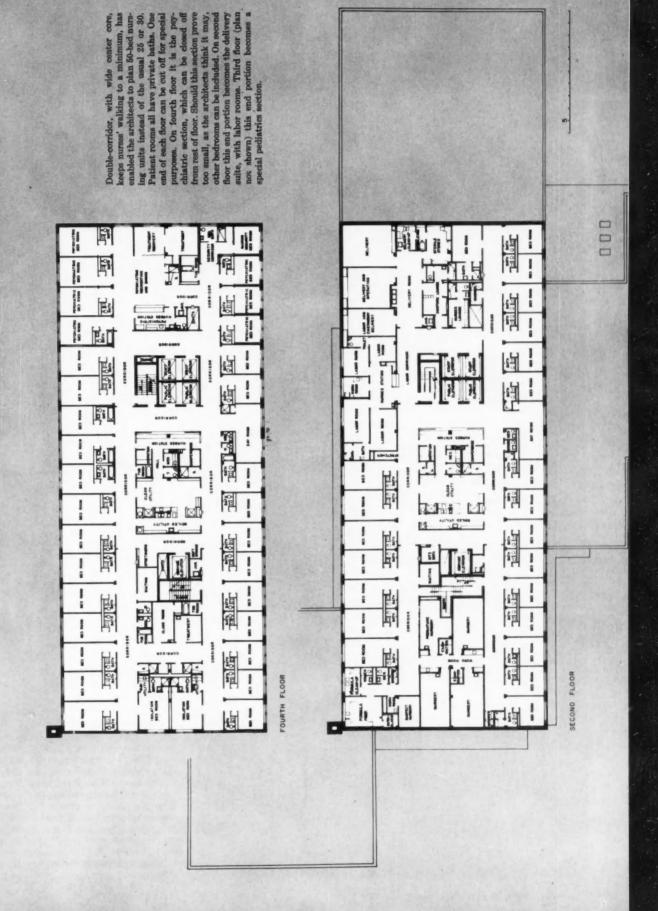






Wadley Hospital

Hospital presents a commodious and pleasant main entrance to visitors; backed by nothing more sinister than offices. Large turnaround leads to visitor parking; there are separate parking areas for staff and for employe cars. Center photograph at the left shows interview booths, acoustically treated. From the main kitchen food service to patients' rooms is by heated food carts, via elevators



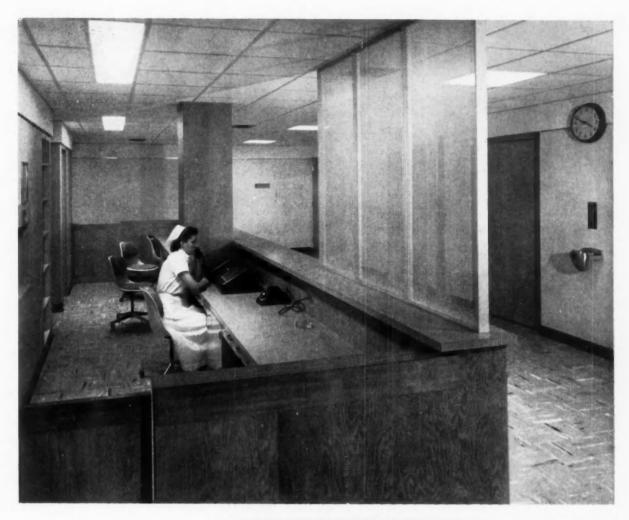






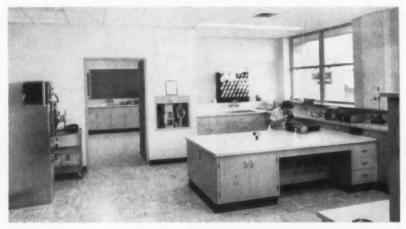
Wadley Hospital

At the rear of the building a ramped service drive leads to basement, though main service entrance is at ground level, to the right in the upper photograph. Center photograph shows autoclaves in central sterilizing room. Sterile supplies, like all other materials, are controlled by a central dispatcher, with a cubby-hole office near central sterilizing room on first floor. Lower view at left shows one of the large utility rooms between double corridors on nursing floors

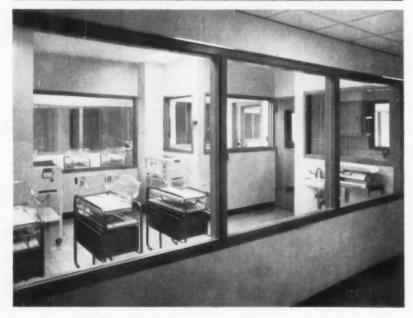




Nurses' station occupies full length of space between two corridors, facing the public elevators. Immediately behind nurses' station is a panel of pneumatic tubes. Opening off the station are two small rooms, one for private conference with doctors, another for doctors to dictate the records. Patient rooms are decorated to have as little institutional atmosphere as possible in a hospital



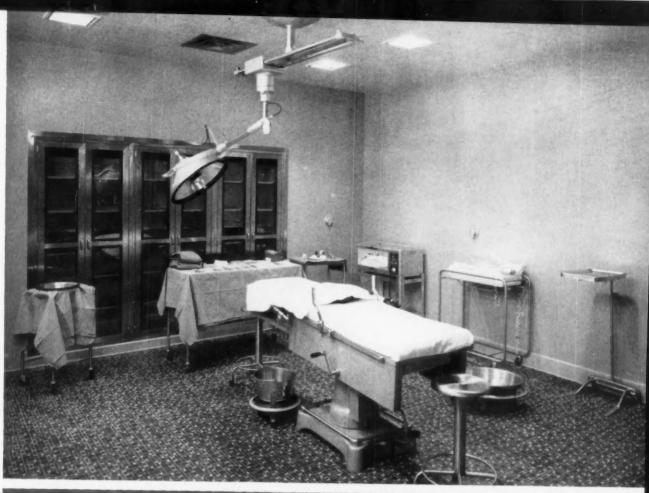




Wadley Hospital

Upper left: the hospital has an exceptionally large laboratory, which is well located with respect to its traffic—close to radiology corridor and surgical suite. View looks through laboratory into cleanup room. Center left: the scrubup sink in the delivery corridor. Lower left: view into one of the nurseries, located between the two corridors on the second floor

Opposite page: Above, one of the delivery rooms; and, below, one of the major operating rooms







Earl Saunders photos

65-Bed General Hospital and County Health Center

Forrest Memorial Hospital, Forrest City, Ark.; Erhart, Eichenbaum, Rauch and Blass, Architects; Edgar K. Riddick, Jr., Mechanical Engineer; H. Price Roark, Structural Engineer; J. E. Pyle, General Contractor

COST TABULATION

Square feet-First Floor	36,610
Square feet—Basement	2,020
TOTAL SQUARE FEET	38,630
TOTAL CONSTRUCTION COST Includes all Group I Equipment—\$19.25 per sq ft	\$744,196.00
GENERAL CONSTRUCTION COST Includes Case and Cabinet Work Includes Site Work (\$24,351,00)	\$412,981.00
PLUMBING, HEATING AND AIR CONDITIONING (100%) Includes all Sterilizers, 100% Oxygen and Vacuum System	241,233.00
ELECTRICAL AND FIXTURES Includes Surgical Lights	78,165.00
KITCHEN EQUIPMENT	11,767.00
ARCHITECT'S FEE	44,650.00
SURVEY AND BORINGS	1,500.00
LAND COST	10,000.00
GROUP II AND III EQUIPMENT	113,000.00
TOTAL PROJECT COST	\$913,346.00
TOTAL USABLE BEDS	68
TOTAL COST PER BED	\$ 13,431.00
This project was partially financed with Hill-Burton funds admi Division of Hospitals, Arkansas State Board of Health	nistered by the

This hospital, at present a 65-bed general facility expandable to 100-bed capacity, combines within the building the county public health center. The

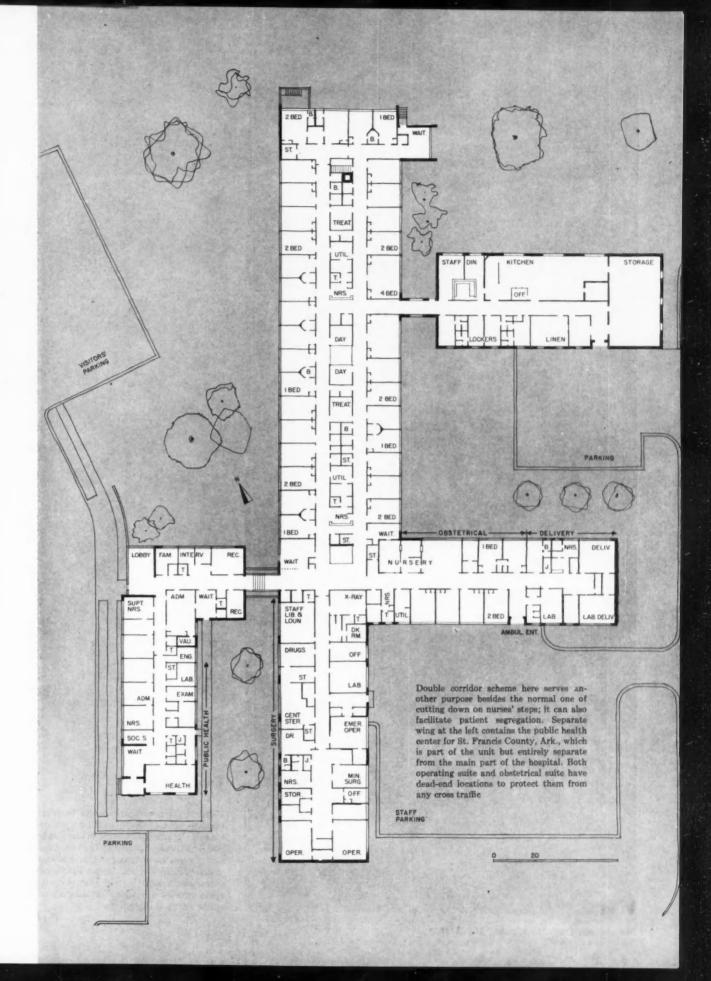
health center has its separate entrance and in fact its own wing so that its operation can be kept isolated from the main building.

With a nine-acre site the building could afford to spread out in a one-story scheme. The nursing portion of the hospital is in effect two nursing units in line. There are two nurses' stations, so placed that either can be closed down during the night hours, or in case the hospital load is unexpectedly light. Major adjunct facilities are in separate wings, the operating suite having the cul de sac location at the end of one wing, the obstetrical suite a similar placing in another. Kitchen and service are together in another separate wing, placed at the central point in the long nursing section.

In general patients are not in private rooms, although there are a dozen or so one-bed rooms in the general nursing units, and a few more in the maternity section. There are two four-bed wards and 17 semi-private rooms. All patient rooms have their own toilet and bath facilities, or share a bath with the adjoining room.

The building is completely air conditioned, with a chilled water and hot water system. There is a central oxygen system, and a central vacuum system also. Doctors' and nurses' call systems are of audio variety.

The building was completed and put into operation within the past year.









Forrest Memorial

Upper left: main entrance to hospital is at one end of the separate wing that contains the public health center; special entrance for center at far end. Left center: small courtyard at the juncture of the cruciform plan. Lower left: view down main corridor looking toward main entrance; visitors' waiting room is shown at the right





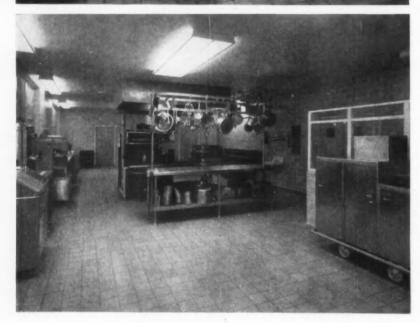


Upper right: one of the nurses' stations between the two corridors. Nurses' stations, two in a long line, can be activated or closed down as load or hours may indicate. Right center: one of the main operating rooms. Lower right: one of the nursery rooms; these are located in the separate wing, going off to the right in the plan, for maternity section

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Forrest Memorial

Upper left: separate entrance in the public health center wing permits use of the facility, especially its auditorium, during evening hours, Left, lower and center: kitchen and dishwashing area have tile floors, concrete block walls. Block walls are standard in service area; exterior walls are of pink brick, with block backup, plastered in bed rooms







Right, top to bottom: private room, semi-private room and four-bed ward. In the main portion of the hospital the beds are distributed as follows: 12 private rooms, two single rooms for isolation use, two four-bed wards and 17 semi-private rooms. In maternity sections there are two private rooms, four semi-private and nursery bassinets for 12, plus premature nursery



Hedrich-Blessing photos

Small Hospital for a Rural Community

McDonough District Hospital, Macomb, Ill. Lankton-Ziegele-Terry and Associates, Architects; Gerhard Hartman, Ph.D., Hospital Consultant; Beling Engineering Consultants, Mechanical Engineers; Alfred Benesch and Associates, Structural Engineers; S. Patti Construction Co., General Contractors

One of the heavily stressed objectives of the Hill-Burton program of the federal government is to get better hospital facilities in outlying districts. This hospital is the direct result of such purpose, following creation of a hospital district to build and operate a hospital in an area not previously served.

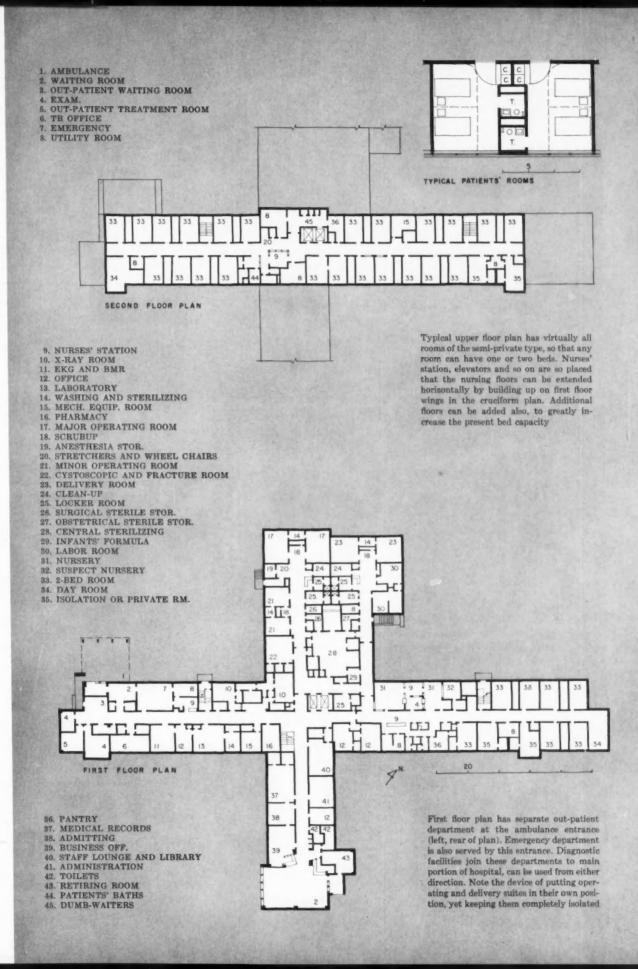
The architects make much of the fact that both they and the hospital consultant were named long before the selection of a site, and that the administrator was on the job a year and a half before completion of the building.

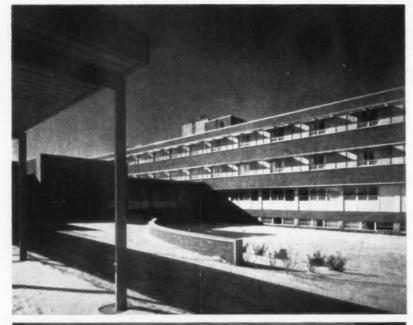
The hospital is a nominal 50-bed hospital, but all its basic facilities—kitchen and dining, operating, delivery, adjunct facilities, and so on—are adequate for a much larger building. Though present size should be sufficient for the next ten years or so, vertical expansion could add bedrooms at any time without disturbance to the working of the hospital.

Moreover, on the nursing floors the nurses' station and other facilities are so placed that wings can be sent out horizontally to complete the same cruciform plan as on the lower floors.

"It will be noted," say the architects, "that the plan of the hospital indicates that all patient rooms are semi-private rooms; in other words, one or two beds can be installed in each room. Each has its own toilet room, clothes locker, drawers and built-in vanity. Wallpaper was used on one wall of each patient room to add to the decorative effect. All patients' bathrooms are tiled, both floor and side wall. An extensive communication system between nurses' stations and patient rooms provides for good communication between these points. A great deal of attention was given during the planning to make the patient rooms as comfortable and cheerful as possible.

The building is completely air conditioned throughout. Costs are given as \$24.42 per sq ft, for 87,942 sq ft; and \$1.958 per cu ft, for 1,096,474 cu ft. These costs include all construction costs, built-in equipment such as sterilizers, kitchen equipment, built-in refrigerators, mortuary refrigerator and so on.









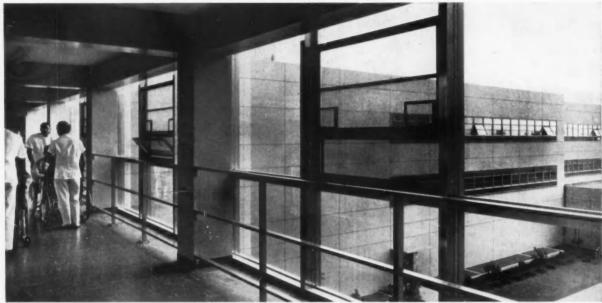
McDonough Hospital

Left above: although the site was flat Illinois farm land, considerable grading was done to permit access to the front of the hospital without steps, and to provide loading dock at the basement level in the rear. Left, center: view of the main lobby. Left, bottom: view of medical staff lounge and library

Opposite page: nurseries are in a corner location between delivery suite and maternity nursing unit, in corridor closed off from main hospital traffic. Bottom, opposite page: view into main operating room, with scrubup sinks shown at the right







First Complete Facilities for Paraplegics

Addition to Long Beach Veterans Administration Hospital, Long Beach, Cal. Welton Becket and Associates, Architects; Murray Erick and Associates, Structural Engineers; Ruth Shellhorn, Landscape Architect; Gust K. Newberg, General Contractor

With the completion of a new addition, the huge Long Beach Veteran's Administration Hospital has the first specially-planned facilities for paraplegics ever built in this country. Five wings extend from a broad, central spine, which, with four floors, have a total of 296,000 sq ft with a capacity of 561 beds, 205 of which are used for paraplegic veterans. The facilities are also planned to care for an out-patient load measured at 980 cases.

According to Dr. Ernest Bors, chief of spinal cord injury service at the hospital, two important considerations of location led to the selection of the Los Angeles area for this facility: mild weather and proximity to a large metropolitan center. A further dividend is the willingness of aircraft companies in this area to hire paralytics.

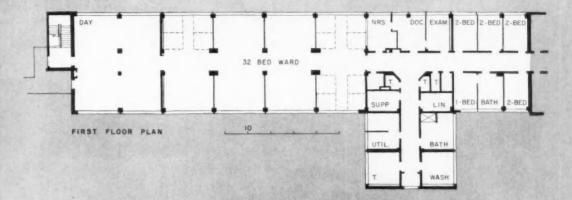
Each new injury case to enter the center is diagnosed by Dr. Bors and his assistants and a specific method of treatment scheduled. There is no general or normal course of treatment. Patients are about equally divided between paraplegics and quadruplegics and no two cases are exactly the same. Treat-

ment involves medical rehabilitation, physical rehabilitation, and vocational-industrial rehabilitation and the center provides facilities for each.

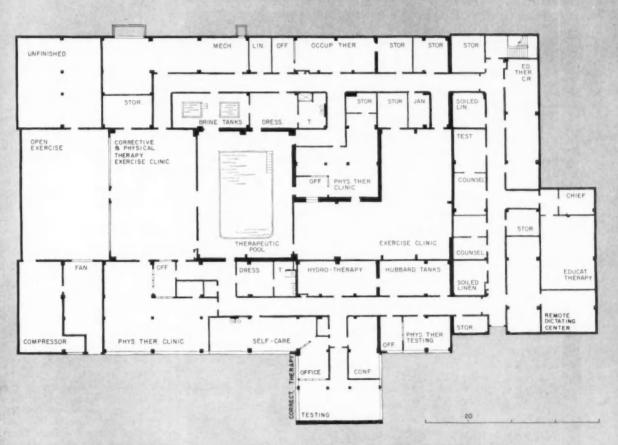
Specific facilities include a gymnasium, physical therapy and occupational therapy areas, a cystoscopy clinic, central bathtub and enema room, swimming pool, and therapeutic pools and brine tanks. The central nursing area, with bathtubs and enema room, is one of the center's features. It is the most economical and efficient method of handling some fifty per cent of patients who are completely helpless. Instead of costly individual facilities for each quadruplegic, the central rooms require less nursing personnel and can handle more patients.

Doctors' and specialists' offices are located on one side of the first floor corridor in the central spine, with treatment facilities and consultation rooms directly across the hall from each office. Private rooms and ward areas are located in the five wings of the first floor

Physical and vocational rehabilitation areas are in the lower level. These areas, some of which are used by general hospital patients as well as spinal cord injury patients, include a machine shop, carpentry, photography, weaving, jewelry making, metal work, lapidary, and radio repair facilities. In the swimming pool and gymnasium, patients learn to use new muscles or tone up old muscles for walking, swimming, and other normal activities.



Plan above is typical of nursing wings for paraplegic inpatients. Most of the patients are in four-bed open wards, with head-high partitions separating one ward from another, and all open to the corridor. Bays are rather spacious, because of all of the paraphernalia necessary. There are, as the plan shows, one single and a few double rooms, for the occasional patients who need more privacy than is possible in the wards



This plan shows what is said to be the most extensive layout of facilities for rehabilitation of paraplegics. Hydrotherapy is most important in the retaining of old muscles and the development of new ones, hence the pool, Hubbard tanks, brine tanks, and so on. Exercise of all types is of course important, so there are extensive areas for it both indoors and outdoors. There is also (plan not shown) a wing devoted to occupational therapy shops







For Paraplegics

Swimming is an especially good exercise for paraplegics, helping them to develop new muscles and tone up old ones. Note the suspended harness, the submerged table and railings. The gymnasium also has a wide variety of exercising devices; it can be used by both bed patients and outpatients. Most of the beds are in wards, but rather spacious wards, because of all of the paraphernalia that goes with the treatment and rehabilitation of patients

Architectural Engineering

Sticks (and Stones) Skin and Bones

A revolution in wood building materials coming? Of late, glamour-type building materials have stolen the show from more traditional ones. The wood industry, for one, now appears acutely aware of this, and is a little tired of being upstaged. Voices within the industry are calling for greater investment in building research as a positive sort of answer to this competition. Some areas for investigation have been proposed by William H. Scheick, head of research and development for the Timber Engineering Co.: (1) eliminate the waste and over-design from present floor, wall and roof systems, (2) panelize construction to eliminate piece-by-piece work on the site, (3) come up with completely new framing concepts [a "blue-sky" possibility is load-bearing panel of particle board for houses which can be cut when necessary, and made so that holes can be knocked out for windows and doors. Idea would be to hold down on-site labor, but to allow greater flexibility in finish materials and variety of facade.]

A current sign of action is a conference the middle of this month for 20 prominent architects, contractors and prefabbers to see what problems they would like to see solved through research. Sponsoring organizations are National Association of Home Builders, National Lumber Manufacturers Association and the Timber Engineering Company.

Earthy Problems

Earthquake maps

Engineers and architects interested in earthquake design will want to note some new maps showing maximum earthquake intensities possible throughout the U. S., and more particularly for California, prepared by C. F. Richter, well-known seismologist at California Institute of Technology at Pasadena. They are based on a special system for mapping earthquake intensities called seismic regionalization in which shaded areas indicate the maximum degree of shaking which can be reasonably expected over a long period of years. It is chiefly useful for longrange planning-locating new developments or siting construction expected to last for centuries. The U. S. map can serve only as a general guide. However a microregionalization map for 3500 miles around Los Angeles is considered to represent earthquake risk with far greater degree of accuracy. The Russians started the idea in 1933. Within the last ten years they developed this systematically and now proposed construction must conform in design to specifications for various mapped degrees of intensity. The procedure is termed, in Russia, seysmicheskoe rayonironavanie (seismic regionalization). Seems as though the Russians are as active below ground as in the space above it!

Will
Tower of Pisa
Topple?

A recent article in *The New York Herald Tribune* reported that it is 17 ft out of kilter, is tilting at the rate of ½ in. per decade and may collapse before the century is out. Pisan architects, the *Trib* says, are alarmed by the lopsided situation and are calling for drastic measures to keep the tower from falling down. One project, suggested by the University of Pisa, ". . . recommends the building of a new steel tower next to the old one. Iron bands, stretching out from the new tower, would clutch the old one around the middle. When the old tower was securely in the grasp of the new one, workmen could erect a concrete column through the center of the leaning tower and dismantle the supporting tower."

This Month's AE Section

THE SEMANTICS OF SPECIFICATIONS. The difficulties of standardizing nomenclature, pp. 224-225.

SUNSHADES FOR UNESCO HEADQUARTERS. How solar and temperature studies guided design, pp. 226-229.

PLUMBING FIXTURES FOR SCHOOLS: What goes where, pp. 230-233.

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 $TIME\mbox{-}SAVER$ STANDARDS. Structural Steel Composite Beams. pp. 241, 243, 245.

THE SEMANTICS OF SPECIFICATIONS

By DAVID F. M. TODD

Life could be a lot easier for everybody in the construction business if, when questions turn up on terminology, they could refer to some sort of dictionary. There are plenty of reasons why building terms are not always clear universally. Recognition of what they are would seem a prerequisite to any solution. The author has had cause enough to ponder the difficulties since he is national chairman of the Construction Specifications Institute's Nomenclature Committee which is seeking an answer. Professionally, he is a partner in the New York architectural firm of Ballard, Todd and Snibbe.

By common consent, construction terminology is a mess. By common consent something should be done about it. Sometimes it is said that we need an Army-type "Standard Nomenclature List," or at the very least a reference dictionary. Awareness of the problem surely exists, but the distance between awareness and solution is enormous.

The construction world is not the same as the Army. We don't have to follow the book if we jolly well don't want to. The hardest thing to overcome, therefore, is the inertia of the individual who refuses to change. All the standards, glossaries and dictionaries won't make the slightest dent unless they are used willingly. If we want to face the problem, if we want to avoid the present necessary evil of defining our terms every time we use them, we at least have to talk about it. This can be fun.

I recall a session in a smoke filled Cleveland hotel room last summer during the CSI annual meeting. A heated discussion took place, not on candidates, but on terminology. A favorite son couldn't have had more ardent partisans. "Top dressing" started it. "Top dressing mortar," "topping mortar" and just plain
"topping" followed, sometimes claimed as synonyms, sometimes as distinctions. Inexorably the talk led to "granolithic," then to "membrane curing" and "monolithic finish." Here partisanship gave way to rueful recognition of a common enemy. Here were three terms, each seeming to say one thing while legitimately meaning quite another. "Granolithic" does not imply granite; "membrane curing" involves not a sheet, but a spray; "monolithic finish" is more often than not a two course construction. Here is lesson number one in construction semantics: don't trust your common, or etymological, sense.

Of course no sensible person will

use a term like "clean earth," because it means "clean dirt"—an obvious contradiction in terms, an absurdity. And yet it appears constantly as the specification for acceptable fill material. There is more compassion for the writer who calls for "wrought iron," expecting to get something other than the drippings from an ordinary open hearth. Will he get it? Of course not. Only if he uses the magic word "genuine" before the "wrought iron" will he stand a chance. This is lesson number two: whenever in doubt say, "AND I MEAN IT." This gives you the psychological edge when an interpretation is demanded.

It follows, of course, that an interpretation should be readily at hand, either yours or somebody else's, preferably the latter, and in book form. This is not always easy. Where is the authority who will make a clear choice between "cap" and "counter" flashing? Who can definitely state that the term "utilities" either does or does not include sewers? What window manufacturer will make a distinction between "architectural projected" and "intermediate projected" sash? For a long time I have meant to ask one of my hardware friends when is a butt not a hinge, and just what is a "butthinge" as distinct from its separate components.

Then too I am anxious to pin down my lathing and acoustic ceiling friends on the nuances of "furring channel," "main runner," "runner channel" and "carrying channel." Here is lesson number three: have lots of friends, preferably friends who have written books because friends don't always agree and bookwriter friend A has the drop on disputant, non-book writer, friend B.

It helps to have some *old* friends too, friends who are old enough to remember what was meant in their youth by those archaic terms that you have unwittingly copied from a dusty spec, or that you have wittingly copied because of a gnawing doubt that it may mean something and you had better play it safe. They don't have to be old enough to remember that pargeting of chimney linings meant one part lime, one part cow dung and three parts fine clay, but they should be able to distinguish between "roofing temper" and "cornice temper" copper, and explain what is meant by "out of wind" cast iron. Some not very oldster should be able to tell when and why "composition" roofing gave way to "built-up" roofing, but can he also defend "composition" base flashing? Why not call for "built-up" base flashing? "Composition roofing and built-up base flashing" seems to make as much sense as "built-up roofing and composition base flashing," but that's not the way it is, presumably because the man says so.

There is one great segment of our semantic problem where friends won't do any good, where they will just confuse the issue. This is the area of the layman's term, the housewife's pet, the adman's dream. Consider "rubber base," and "siliconized." These have the ring of modern technology, of the new wonder product, of science brought to the doorstep. Do they have a place in your specification? Is the paint you call "rubber base" a "latex" paint? Is it "chlorinated rubber"? Can it be made of vinyls and acrylics? Have you ever tried to find out whether manufacturer A's "Supergook" is the same thing as manufacturer B's "Magicmuck"?

Though confused as you may be, dismayed, buffeted by claims and counter claims, and hopelessly unable to enforce an "or equal" clause, are you yet bold enough to stick with Federal Specs? If you do you can be proud of your integrity even though you may be cutting off your nose to spite your face. There just may be a lot of good products here that you are missing if the advertisers and salesmen haven't told you exactly what they are selling.

Where do we go from here? Obviously, the manufacturers should treat professionals like professionals, not housewives. This doesn't solve, however, the problem of changing techniques. Perhaps before

we go further we should look backwards to see why we have such oddities as "monolithic finish."

Not too many years ago it was considered poor practice indeed to specify a concrete finish floor without the addition of a 1½ in. thick "cement topping." (cf. "top dressing," "top dressing mortar," "topping mortar.") Only in basements or utility spaces would we have dared to pour a structural concrete mix alone. The conventional two-course construction involved (as it still does) a carefully graded top mix poured over the base slab after the base slab had set. Later techniques involved a thinner "topping" (about 34 in.) poured before the base slab had set. The two layers were assumed to bond and become "monolithic," perhaps more in theory than practice. Still later, under the pressure of rising costs, the "topping" came to be used less frequently, and the structural slab was finished off with a couple of steel trowelings. It worked, not as good a job, but it worked-and it was really monolithic. So now there are two types of "monolithic" finishes, and as for "granolithic," a term which originally meant granite chips in the "topping," it now means—unless you are particular-a mix with any reasonably durable aggregate.

If it has been demonstrated that it is perfectly possible to specify a "monolithic granolithic" finish, it should also have been demonstrated that to do so you must spell out your intent. The term doesn't stand alone. This is the dilemma. The ideal is an explicit term, omitting all the subparagraphs, for each technique of construction work-the true streamlined specification. This is a dream, however, and will be until that unhappy day when techniques no longer change. Furthermore, the architect who does not write his own specifications is one of the worst offenders in exact terminology.

An architect doesn't have to know a technical term when he says "Let's use that glop we tried on the other job." The chances are he will be understood. However, if he uses a term incorrectly or loosely under the impression that it is precise, there can be trouble. Some offenses result from exclusive visual interest ("smooth face block"), some from the confusion of new materials ("latex"), some from the complications of changing techniques ("monolithic finish"), and some from a predilection for sloppy language ("clean earth").

Obviously any word a professional uses should communicate something.

In specifications, the meaning must be clear to the estimator, the purchasing agent, the superintendent, the clerk of the works, and most of all to the specification writer himself. The terms he uses must be legal and enforceable within his understanding of their meaning. However, the search for the legally pure and readily understood term sometimes is double headed and gallops off in opposite directions.

Consider the term "concrete block." Of course, you know that you have to look further to find out what kind of a concrete block is up for discussion. You know that it can be either a load-bearing type or a non-load-bearing type; either hollow or solid; made of cinders, sand and stone, or lightweight aggregate. If pressed, you might even be able to mention some of the lightweight aggregates.

Consider now the superintendent in the field and the clerk of the works. Unless they are very sophisticated chaps you can bet that they have a clear notion that concrete blocks are not made of cinders, nor any other of these new fangled lightweight aggregates. They are made of good hard stone and sand because, to them, that's what "concrete" means. They call a block made of cinders a "cinder block," and so on. with the many other good and useful aggregates. If their understanding of "concrete" is a bit restrictive. at least they are following common trade practice, and are much more explicit than the architect who vaguely calls for "smooth face block.

Here is one of the problems of construction nomenclature. With a multiplicity of materials, many able to do the job, with competition constantly encouraged, and with an ever growing tendency to shun the exclusive trade name, we need the comforting, inviolate, universally accepted standard.

The American Society for Testing Materials has made a noble contribution on many materials. One of them is concrete block. They have said a great deal about the strength, size, density and absorption of the material. In fact you are pretty safe, legally at least, when you specify by ASTM. The only trouble is, they don't tell you what it's made of. Furthermore, they defy common sense by calling something "solid" that is not solid at all, and to cap it all, they beg the question on concrete block by the term "concrete masonry unit"! Please, someone, what is a concrete block? The term that 98 percent of the practical public uses is thrown into the ash can. "Block" gives way to "unit." (Next time you're on the job tell the mason his unit work stinks.)

Here, we might say, is a case of self-imposed confusion. We have willed it, and we are stuck with it. We have strengthened our legal position by sacrificing the language of the common man. Our course is clear—ram it down his throat.

If this sounds hard-hearted, it is, unfortunately, necessary. Once we adopt standards then let's for heaven's sake use them. Perhaps more recognition in the beginning should be given to the vernacular, the trade usage. This would speed up eventual acceptance, but it is not necessarily the primary consideration.

In justice to ASTM and ASA (American Standards Association) their interests are not exclusively for the specification writer's benefit. Nor, for that matter, are all of our semantic problems to be solved through standard materials or standard procedures. The trades themselves need a good shaking up. Why should there be four or five different terms for the simple 1½ in. channel used for hung ceilings? Why should "anchor" have almost as many definitions as there are trades?

Of course, to try to change overnight the habits and speech of an entire industry as complex as construction would be vain and ridiculous. As said at the beginning, to display the problem, to bring it out, to pin point those areas of disagreement and difficulty, will make us conscious of our semantic predicament to the point where our unconscious-we hope-will constantly be on the alert for clarity and precision. We shall be willing to blow the dust from the reference books on the shelves, and willing to accept a new term or an old one used in a new way. Only by common agreement that the problem exists and needs solution will standards find a receptive soil for healthy growth and accept-

Through more support for ASTM and ASA and with more widespread and careful preparation of industry association standards, all being done with the help of professional organizations, perhaps a dent can be made. Of course, they alone are only good and useful when used with a healthy respect for the English language. If we have such respect, and if the search for clarity makes us eager to eliminate the confusions, then we can set our own goals and the means of obtaining them. If we don't care enough, we can keep rolling about in our unkempt beds of semantic hay.



Jane Doggett

How Solar and Temperature Studies Guided

DESIGN OF SUNSHADES FOR UNESCO

By Seymour Howard, Architect

Associate Professor,

Vertical sunshades of solar-reducing glass have been a design feature of several buildings by Marcel Breuer. They have the advantage of reducing heat and glare without hiding the view or requiring moving parts. The latest building to use them is the UNESCO secretariat in Paris. Its principal sunshading device is a ribbon of glass combined with horizontal louvered concrete overhangs. In the working drawing stage, the efficacy of this arrangement was checked out by a series of calculations. These are summarized here. The solar studies also showed the designers how far the glass sunshades (which have a constant depth) should project from the overhang to get equivalent shading on the various orientations when the sun's radiation is at its peak.

Marcel Breuer has made a virtue of necessity by inventing and adapting various devices to keep the summer sun out but to let the winter sun in. The practical solutions to a real problem have been used as positive elements to enrich his façades by providing depth and shadow.

It is no surprise, then, to find sun control devices shown on both of the preliminary projects for the UNESCO building designed by him in collaboration with the French architect Bernard Zehrfuss and the Italian engineer Pier Luigi Nervi. The windows of the office building on the site in the Bois de Boulogne were protected by glass sunshades supported free of the façade, similar to those used in the Torrington factory in Canada, then under construction. The second project-which was the accepted one-at Place de Fontenoy, was designed with similar glass sunshades, combined with continuous horizontal louvered concrete overhangs and vertical stone slab set perpendicular to the façade.

The purpose of this article is to show how the design of these solar control elements was refined and checked by calculation during the preparation of the working draw-

It should be remembered that in the Paris climate the sun's rays are very welcome during most of the year, and that the reduction of glare is perhaps more important than the complete elimination of sun radiation. The heat-absorbing glass panels have the advantage of reducing glare and heat without obstructing the view or requiring complicated moving parts.

As can be seen from the plan, the secretariat building has six principal orientations, plus the curved central sections in which the orientation varies. Thorough studies therefore had to be made of six conditions.

Among those working for the office set up in Paris at this time by Breuer, Nervi and Zehrfuss was Piotr Kowalski, a young Polish architect recently graduated from M.I.T. While there he had worked for Victor and Aladar Olgyay on the research for a Housing and Home Finance Agency project, published in January, 1954, as "The Application of Climatic Data to House Design." Under Breuer's personal supervision he proceeded to make a

geometrical and numerical analysis of the heat gain on the six elevations and to check the exact dimensions of the sun control devices. I also collaborated with him on this, since I was then working on the exterior details.

As technical references he used a preliminary copy of the HHFA Climatic Data report, meteorological records from the Observatoire du Parc Montsouris, and information obtained from the "Sun Angle Calculator" (Libbey-Owens-Ford Glass Co. and Aeronautical Services, Inc.) such as the sun path diagram.

For the UNESCO secretariat building the decision had been made not to provide air conditioning. Therefore it is not possible to reduce the temperature of the air inside the building below what it is outdoors, nor to lower the relative humidity. Cross ventilation was deemed essential. In the design, the exterior wall of every room was provided with a sliding glass panel which opened up more than 35 per cent of the glass area to any breeze or to the "stack effect" currents which the height of the building makes possible.

The remaining aspect of the problem is then to control the sun's radiation, or in everyday words, how to keep the building *shaded*.

When is Shading Needed?

Figure I shows the average air temperatures for Paris over an 80 year period. The dark area marks the "overheated" period, defined as the time when the temperature is above 21 C (70 F). It extends roughly from the end of June to the first of September, between the hours of 10:00 a.m. and 6:00 p.m. In order to be

HEADQUARTERS

Pratt Institute

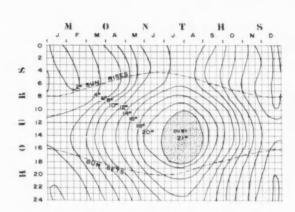


FIGURE 1. Average air temperatures (centigrade) for Paris over a period of 80 years. (Multiply by 9/5 and add 32 to get degrees Fahrenheit.)

comfortable during this period, one should be in the shade oneself and the building also should be shaded.

In addition to the ambient temperature of the air, direct solar radiation is the most important natural contribution to the heat gain in buildings. During the overheated time this radiation should be intercepted before it can reach into the building and heat up the floor, the furniture, etc., which then act as secondary heat sources. There are two main ways of doing this:

1. The short wave solar radiation can be changed into heat by absorption and then dissipated by convection. For greatest efficiency, this should be done out from the face of the building.

2. The radiation can be reflected. The concrete louvers used in the UNESCO building act partly by absorption and partly by reflection. The heat-absorbing glass absorbs some, reflects some and transmits the rest. In both cases the heat which is absorbed is carried away by convection currents which can rise unobstructed up the face of the building. Set away from the building as it is, the heat-absorbing glass is much more effective than if it were placed in the windows.

The temperature graph shows that the overheated period centers around the first of August. This was therefore taken as the design date for sun protection. The latitude of Paris is approximately 49° North.

Which Facades Should be Protected?

Solar radiation arrives mostly under two forms: as direct radiation from the sun in a clear sky and as diffuse or sky radiation with an overcast sky. It can also show itself indirectly as long-wave terrestrial radiation.

These studies were concerned only with direct solar radiation. This was plotted with the charts of the "Sun Angle Calculator" and of the HHFA report "The Application of Climatic Data to House Design."

Radiation striking the building has a double effect. It falls directly on people, who feel it immediately as heat; and secondly, the radiation is absorbed by the mass of the building and its contents, which in turn raise the temperature of the inside air. There is an appreciable time lag involved due to the building mass, in this second effect. For these calculations this time lag was taken as two hours, since it is a relatively light structure.

Ideally the secondary effects of radiation should not be felt on the inside of the building during the overheated period, taking the time lag into account. (See Figures 2a and 2b.)

1. N N E facade. 220 Btu per day per sq ft on August 1st. This is a very small amount of heat. The peak load arrives at 6 a.m. and its effect will be felt on the inside around 8 a.m. This is before office hours and at eight o'clock the temperature outdoors is still below critical. If the windows are open, the morning breezes can keep the interior pleasantly cool. Sun protection is not needed.

2. E N E facade. 755 Btu per day per sq ft on August 1st. This is a considerable amount of heat. The maximum radiation occurs about 7:30 a.m. and the heating effect will

be felt inside around 9:30 a.m. The outdoor temperature is still below critical, so comfort can be achieved by opening the windows. Sun protection is not essential on this facade. 3. S E facade. 1020 Btu per day per sq ft. It is this façade which receives the maximum heat. The peak intensity occurs at 9 a.m. and will be felt on the inside around 11 a.m. The outdoor temperature is well above critical by this time. Radiation continues to penetrate the rooms along this facade until 2 p.m. and its effects will be felt until 4 p.m. indoors, this time when the outdoor temperature is highest. This facade must be protected.

4. S S W facade. 895 Btu per day per sq ft. This represents a large amount of heat spread through most of the working day. Maximum radiation is at 1:30 p.m., with the maximum heating effect inside about 3:30 p.m., which is also the time of maximum outdoor temperature. Sun protection is absolutely necessary.

5. W S W facade. 500 Btu per day per sq ft. A very large amount of heat, all of which is felt in the afternoon at the same time as peak temperatures of the outside air. Sun protection is absolutely necessary.
6. N W facade. 500 Btu per day per sq ft. A moderate amount of heat with the peak late in the afternoon. The outdoor temperature is already falling by this time, so comfort can be achieved by ventilation. Most of the heating effect will be felt after office hours. Sun protection is not necessary.

In conclusion, complete sun protection is needed on these façades: S E; S S W; W S W

ARCHITECTURAL RECORD March 1959

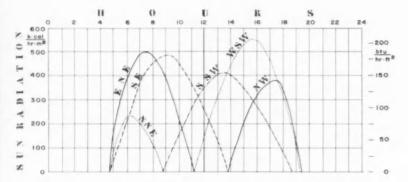


FIGURE 2a. Clear sky radiation on the six façades for August 1

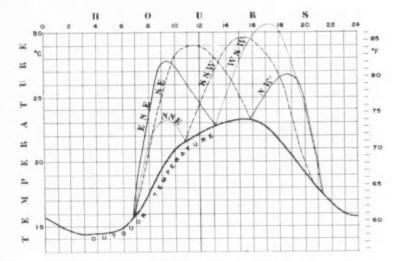


FIGURE 2b. Temperatures, determined by formula, which would exist inside rooms if no sun control devices were used. Indoor temperatures were calculated by adding the effect of sun radiation (Fig. 2a) to the outdoor temperature, assuming a 2-hr time lag. To plot this, 12.5 Btu per sq ft are assumed equal to a 1 F rise in temperature, based on studies by Prof. C. P. Yaglou of Harvard

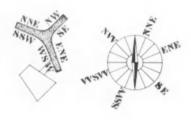


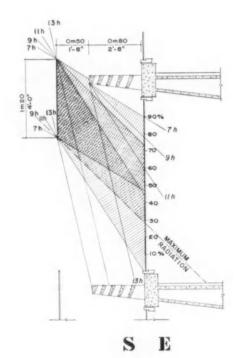
FIGURE 3 a, b, c. Diagrams show percentage of shading for various hours of the day on those façades where sunshades were provided. Accompanying graphs indicate relative amounts of solar radiation cut off by the solar-reducing glass and the concrete overhang

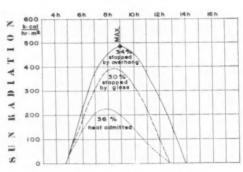
entations in the curved section between S S W and W S W.)

What is The Efficacy of the Sun Protection Devices?

Each façade receives its radiation under different conditions, at different hours and at different angles. The maximum intensity of radiation occurs when the bearing of the sun is perpendicular to the façade. The closer the façade faces to true south, the higher the sun is; the closer to east or west, the lower the sun.

These differences are taken into account by moving the heat-absorbing glass closer or farther from the face of the building. The farther the





façade faces away from true south, the farther the glass is set out, thus providing a more or less uniform protection from the sun. The distance by which the heat-absorbing glass is held away from the face of the building was determined so that during the period of maximum radiation on each façade the shadow cast on the façade is the same, with about 75 per cent of the window shaded.

In order to check the design numerically, sections were drawn of each of the three critical façades and the rays of the sun were plotted at two hour intervals. (See Figures 3 a, b, c). The amount of radiation intercepted is directly proportional to

the shadow cast and to the opacity to heat radiation of the sun control device. The louvered concrete overhangs are counted as 100 per cent obscure and the heat-absorbing glass as 65 per cent. When the same glass is used in a window or curtain wall, its net absorption is only about 30 per cent.

Taking the S E façade as an example: At 11 a.m. the overhang shades 40 per cent and the glass 45 per cent of the window:

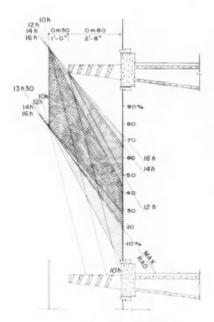
Overhang: 100% opaque x

40% shadow = 40% Glass: 65% opaque x

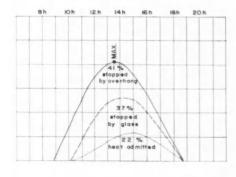
45% shadow = 30%

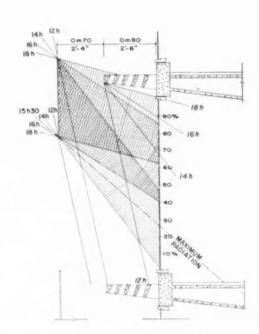
Total reduction in radiation: 70%

These results were plotted on the radiation diagram. At 11 a.m. the total radiation is 380 kilocalories per hr per sq m (140 Btu per hr per sq ft) 40 per cent of this is subtracted for the overhang (150 kilocalories) and 30 per cent for the heat-absorbing glass (115 kilocalories). By doing this for every two hour interval the three curves of radiation can be drawn: one for the unprotected window: one for the window with louvered overhang only; and one for the window with overhang and with the heat-absorbing glass. The area under each of these curves gives the corresponding total daily solar radia-

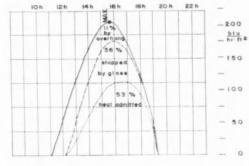












SCHOOL PLUMBING FIXTURES

What Goes Where?

Every architect who has ever designed a school knows that codes, planning manuals, school administrators, teachers—and architects are often in something less than complete agreement on how educational facilities should be equipped. However, a report being issued this month by the School Planning Laboratory of Stanford University's School of Education may help to reconcile conflicting views in at least one area: determining the size, type, number and location of plumbing fixtures that will best serve both the physical needs of the students and the educational program of the school.

> The study on which the report is based was made in an attempt "to state in an organized, logical manner . . . the practices and needs of public schools in the area of plumbing fix-ture installations." Under a grant from the National Plumbing Fixture Manufacturers Association, the investigators, led by Drs. James D. MacConnell and William R. Odell, tracked down pertinent data via questionnaires to teachers and principals, personal interviews with architects and key administrators, analyses of state and city building and plumbing codes, perusals of blueprints and specifications for educational buildings in major school systems, examination of the rather sparse existing literature, and even speciallyconducted time-use studies. They then leavened the information thus gleaned with data compiled from the Planning Laboratory's own considerable background in school programming to arrive at the findings and recommendations excerpted here. These excerpts-and certainly the report itself-should at least serve as a check list for planning school plumbing fixture installations. At best, they may prove a valuable programming aid to both the architect and the school board he serves.

TOILET ROOMS Number and Location

Educators generally agree that separate toilet facilities for boys and girls should be provided from kindergarten on, although some school systems provide only one toilet room in kindergarten and sometimes first grade classrooms. If dual facilities are not provided, the single toilet room may serve both sexes or dual facilities may be shared by two adjacent rooms.

Above grade one, centrally located gang toilet rooms are favored. Such factors as supervision, age differences, traffic flow and time utilization suggest optimum ratios of one toilet room for each four to six classrooms in elementary schools, and one for each six to eight classrooms from grade seven to grade twelve. If schools cover different grades and maturity levels, separate facilities should be provided at least for the kindergarten-primary grades, the junior high middle grades, the school and the senior high school.

Requirements for Special Areas

Over and above these general basic requirements, toilet rooms should be provided in certain special areas.

- În HEALTH SUITES for example, a toilet room for the nurse and patients is required; and men's and women's toilet rooms should be provided off the TEACHERS' LOUNGE, preferably with entrances from a corridor rather than from the lounge itself
- Such areas as AUDITORIUMS, GYMNASIUMS AND MUSIC CENTERS require nearby toilet rooms for student use. If they are also to be used for public performances or gatherings, it is common practice to use student facilities that are conveniently located, or to make public facilities available for student use during school hours. In any case, facilities must be adequate to care for the peak occupancy, public or student, and must be located so that the rest of the school plant need not be open to the public.
- When the teaching areas for ART, INDUSTRIAL ARTS, ETC. are located on the perimeter of the school, as they often are, they too require teachers' and pupils' toilet rooms in the immediate area, without regard to the number provided elsewhere. The same is true of PHYSICAL EDUCATION DEPARTMENTS, where toilets must be provided in proportion to the peak occupancies of dressing-locker-shower areas.

Layout and Special Provisions

All toilet rooms should be designed

with the problems of maintenance, operation and supervision in mind. In order to cut down loitering, they should be no larger than is necessary to accommodate the required fixtures and the anticipated traffic, and while the main entrance should be properly screened from the corridor, doors may not be necessary: some systems have realized better supervision by using screen baffles instead.

Lavatories or washfountains should be located near the exits, with urinals nearer the door than the toilets. To get fuller use of lavatories (and prevent hair-clogged drains) mirrors should be near but not over them. In junior and senior high schools, a book shelf should be provided near the entrance, and in toilet rooms for girls above the sixth grade, there should be a sanitary napkin dispenser and disposal. There should be no drinking fountains in toilet rooms.

To discourage smoking and "art work", the space should be well-lighted, preferably with some direct sun. Ventilation should be accomplished by negative pressure, with or without exhaust fans, rather than by forced air.

Materials

Although the selection of any specific material for floors, walls and toilet stalls will depend on its relationship to other materials in terms of initial cost, maintenance costs, and the conditions of use, these surfaces should, in general, be of durable, impervious materials which will not absorb odors.

- FLOORS are generally of ceramic tile, quarry tile, or terrazzo, although sealing of cured grouting and of terrazzo is desirable. If concrete is used, it must be well sealed and kept that way.
- WALLS of tile or other proven impervious materials have been most satisfactory. Hard plaster has been used with varying degrees of success, but generally the maintenance costs soon exceed the saving realized in its lower initial cost. Such materials as aggregate blocks are satisfactory for toilet room walls only if they are completely and competently sealed. All wall surfaces, regardless of the material used, should be of light, highly reflective colors.
- TOILET STALLS should be durable enough to resist abuse, relatively easy to maintain and to clean, and fairly light in color. There is no justification for their omission or removal from either boys' or girls' toilet rooms. Materials that have been found to be suitable for toilet stalls include:

Enameled metal, which is low in initial cost, lightweight and sanitary:

Porcelain enameled metal, which is easy to clean, relatively light weight and sanitary;

Tempered glass, which is impervious, sanitary and easy to clean;

Ceramic tile, which is durable and sanitary if well maintained and cleaned;

Concrete plaster, which is durable and may be sanitary if carefully maintained but requires frequent painting and sealing;

Waxed transite, and similar cement-based panels which are economical, easy to clean and strong, though rusting of frames may occur if moisture is allowed to collect adjacent to them; and

Marble, which is standard in many systems and would be used in others except for its high initial cost.

• DOORS for toilet stalls are commonly of such materials as:

Wood, which is easy to repair, but requires considerable maintenance; Plastic covered wood, which is

easy to clean and difficult to disfigure, but will scratch;

Enameled metal, which has a low first cost but a short life, and scratches and rusts easily; and

Porcelain enameled steel, which has a higher initial cost but is easily cleaned and maintained.

TOILETS

Bowls and Seats

For proper sanitation, the toilet bowl must have a smooth impervious finish with no cracks or joints, and a minimum of fouling surfaces which are not covered by water. Vitreous china is generally accepted as the most desirable material, and the elongated oval bowl is the preferred shape except for kindergarten through third grade students. There is almost total acceptance of elongated, plastic or plastic-covered, open-front seats without covers, although the round closed front type are again preferred for kindergarten through third grade. Little justification was found for the installation of germicidal lamps in conjunction with toilet seats, and even less for the use of integral china seats rather than the separate hinged type.

Flush Valves

For the most part, syphon jet and blow-out toilets with non-hold-open flush valves of either the piston or diaphragm type are used. Flush valves are operated in several ways, and should either be concealed behind the wall or, if exposed, designed to be vandal-resistant. In some in-

RECOMMENDED FIXTURE MOUNTING HEIGHTS

FIXTURE	GRADES	MOUNTING HEIGHT
TOILETS	K-3	13 in. (floor mounted
	4-12	15 in. (wall mounted
URINALS	K-3	18 in.
maximum height	4-6	20 in.
lip to floor	7-9	22 in.
	10-12	24 in.
LAVATORIES	K-1	24 in.
maximum height	2-6	27 in.
rim to floor*	7-12	31 in.
WORK SINKS	K (if used by children)	24 in.
maximum height	4-6	27 in.
rim to floor**	7-12	31 in.
DRINKING FOUNTAINS	к-3	24 in.
maximum height	4-6	28 in.
nozzle top to floor	7-12	34 in.
SHOWERS	7-9 boys	56 in.
average height	girls	54 in.
bottom of shower head		60 in.
to floor	girls	56 in.

* Height based on 6 in. basin depth ** Height based on 8 in. basin depth

stances it may be necessary to provide seat-operated flushing toilets, and for operations requiring minimum water consumption, pressure tank installations are often desirable. "Quiet" fixtures should, of course, be specified if the wall to which they are attached is adjacent to a classroom, teacher's room or office.

Size and Mounting

Although 10, 13, and 15 in. bowls are all in common use, pupil and parent opposition to the 10 in. size may outweigh its physiological advantages for the very young students. Wall mounted fixtures are most desirable from the standpoint of cleaning, but since a wet mop will not clear a 13 in. wall mounted fixture, floor mounting is more satisfactory for fixtures of this height.

URINALS

Type and Mounting

Urinals are recommended for boys in all grades from kindergarten on. Like toilet bowls and other fixtures, they should be of smooth impervious materials (preferably vitreous china) and should have a minimum of fouling surfaces, all of which should be cleaned by the flushing action. Outlets and traps must be of sufficient size to handle the volumes

of water required for thorough flushing.

Although pedestal urinals are sometimes used in schools, they are considered unsatisfactory for general boys' room installations, and stall or wall-hung models are more commonly provided. Of the two, the wall mounted type, with an extended lip, is preferred because it is more sanitary, less apt to splash the user, and serve as a catch-all for trash.

Flush Valves

User-operated flush valves similar to those for toilets are most often installed, but since boys apparently do not flush urinals as regularly as they flush toilets, motor operated flush valves should be installed whenever it is economically feasible. To avoid tampering they should be either concealed or mounted high above the fixture. Where water supply is not a problem, continuously-operating flush tanks are probably most economical, but in any given situation the cost of the water wasted should be weighed against the additional expense of installing electrically operated urinal valves.

Girls Urinals

Although girls' urinals are probably more sanitary, save some time and require fewer fixtures, they have only recently come into use, and reaction to them is mixed. In any case, there is not enough data on them for any recommendation to be made.

LAVATORIES

Location

Lavatories are commonly located in toilet rooms, with supplementary fixtures located in or near the cafeteria so that children may conveniently wash their hands before eating. Handwashing facilities may also be necessary in shops, crafts rooms, gyms, certain special areas in the journalism and business education departments—wherever children must wash up before proceeding to another class. In toilet rooms, lavatories should be located near the entrance, and should be screened from toilets but not from each other.

Materials

Vitreous china and stainless steel are generally considered the best materials for lavatories, although enameled cast iron, precast stone, or marble may be preferred where high strength is important (for example, in shops or service areas).

Mounting

Wall mounting is always desirable from the standpoint of cleaning, but the unit must be properly installed to insure rigidity. Concealed chair-carriers are most satisfactory since they present no difficult cleaning spaces. Vanity and cabinet type mounts, which are too expensive and too difficult to clean for use in general toilet room spaces, may have a limited place in homemaking suites and teachers' lounges.

Controls

The greatest single problem in selecting lavatories for schools is that of providing satisfactory controls. These must, of course, require a minimum of maintenance and replacement and be as vandal-proof as possible. (Both the adjustment and the faucet handle, if there is one, should be keyed rather than simple screw controlled.) In addition, they should permit washing in running water, should not require closing by hand after the hands are washed, and should not waste water. Foot-operated controls meet all these requirements, but they are expensive to install, and in most cases the controls used in schools represent a compromise of one or more of the desirable points. If the controls can be operated by the child involved (pushdown timing devices, for example, are difficult for small children to use), the order of preference, from a purely functional standpoint, is from foot controls to easily operated timing devices to standard shut-off faucets to self-closing, non-timing faucets. Screens are recommended in lieu of waste plugs at the basin drain to permit washing in running water, and tempered water (up to 115 degrees F) is advised for all generaluse layatories.

Washfountains

In addition to standard lavatories, washfountains have found wide use—particularly in industrial arts shops, corridor installations adjacent to cafeterias and in group toilet rooms. Their basic design, with the foot control, permits washing in running water and, by eliminating hand controls, gives better sanitation.

WORK SINKS

Location

Work sinks, which were formerly provided only in such areas as home-making and science, are now considered desirable—if not essential—in all elementary classrooms; in core and special area classrooms at the junior high school level; and in not only the special areas but also many social studies and some language arts areas of the senior high school.

Type and Mounting

The classroom sink may be used as a source of water, as a place to wash equipment and supplies, and for handwashing after painting or similar activities, with the type of sink and mounting depending on the particular use. Most sinks are mounted on work and storage cabinets, and surrounded by impervious working surfaces and splash boards. Those used primarily for washing equipment often have an integral back, while those used as a source of water and for clean-up may be flush mounted to the working surface. In any case they should be designed and constructed for easy, thorough cleaning. General use sinks for installation in areas other than science are usually enameled cast iron or steel, vitreous china or stainless steel. They should be provided with water mixing supply faucets, and with tempered water.

Sinks for Special Areas

• For all-purpose ART LABORATORIES, two peninsula or island work sinks are desirable in addition to a perimeter, double-compartment sink for soaking basketry materials. If water soluble paints, clays and similar materials are used, special traps should be provided, and in all cases the water flow should be sufficient.

to wash away sediment.

• HOMEMAKING DEPARTMENTS are generally provided with a variety of equipment including cabinets and both single and double compartmented sinks, usually of enameled cast iron, with mixing faucets. A general purpose sink is needed in the clothing area.

• Handwashing facilities in the INDUSTRIAL ARTS AREAS may be either wall mounted wash sinks, usually of cast iron or vitreous china, or wash fountains of precast stone, marble or stainless steel. Hot (120 degree F) and cold water are both needed, especially in any situation where the hands may become extremely soiled or greasy.

The MUSIC DEPARTMENT office or workroom requires a work sink as a source of water and as a place to wash small parts (and hands) during instrument repairs. Both a high velocity jet and a standard faucet may be needed, depending on the extent of repair work anticipated.

• Sinks are also needed in all WORK-ROOMS provided for clerical personnel and teachers, as well as in business education, journalism and library areas. To simplify maintenance, they should be of the same type installed in the classrooms. However they should provide both cold and tempered water.

• In SCIENCE CLASSROOMS, where various caustics and acids are dealt with, both sinks and work spaces must be acid-resistant, durable and easily cleaned. Soapstone is widely used, and acid-resisting enameled cast iron and steel, asbestos cement products, sealed slate, stainless steel, and ceramic products also work well if carefully used and properly maintained. If only small amounts of dilute solutions of corrosive chemicals are used, regular extra heavy cast iron soil pipe is adequate for wastes and vents; however, the use of large amounts of concentrated chemicals demands that the greater initial cost of high silicon content, acid-resistant pipe be weighed against the cost of periodically replacing regular cast iron waste and vent lines. These lines should run independently to the main building drain where they will be diluted by waste from other parts of the buildings. Extra heavy welded lead or duriron traps are recommended for fixture connections.

DRINKING FOUNTAINS

The school's—and the architect's—responsibility in installing drinking fountains extends not only to providing them in proper numbers and locations but also to making sure that they are safe and sanitary.

Location

For greater convenience, better supervision and more efficient time use, it is recommended that they be placed within the main classroom (not the toilet room), away from doors and other traffic lanes, from kindergarten through grade six. They should not be a part of the classroom work sink.

In junior and senior high schools, drinking fountains should be in the corridors, recessed, and away from stairs and corners. And in all schools, additional fixtures should be provided in areas near the plant perimeter and in areas where strenuous activities or student and public gatherings take place.

Type and Mounting

The drinking fountains should of course be designed so that the mouth does not touch the water outlet and so that water does not fall back upon the orifice. Pedestal fountains are often specified for playground installations, but wall mounted single or multiple place fixtures are preferred for interior use. To minimize squirting of water, they should be equipped with water pressure regulators and guards.

It may also be desirable to provide water chillers and coolers in areas of extreme heat, and freeze-proof mechanical parts in areas where freezing is a problem.

SHOWERS

While shower installations are made in some schools, elementary as well as secondary, to serve students who have no bathing facilities at home, most are designed to serve junior or senior high school physical education programs. In either case, their purpose is personal washing and the installation should be planned to encourage use by the students. This means general cleanliness of shower rooms, adequate space for traffic in and out, some provision for individual control of water temperature and flow, and an adequate flow of water. It also means avoiding such installations as "rain rooms" and "progressive lanes," which are generally disliked by both boys and girls, although shower lanes fill a need in conjunction with swimming pools. Boys' showers are universally of the group type, while combined gang and individually partitioned showers are recommended for girls.

Controls

Every school shower installation requires tamper-proof temperature control protection, with only tempered water at a temperature of 120

RECOMMENDED FIXTURE—PUPIL RATIOS*

FIXTURE	GRAI	DES	FIXT	TURE/STUDENT RA	Max.
TOILETS	K-6	boys	1:20		1:40
		girls	1:15		1:35
	7-12	boys	1:30		1:50
		girls	1:20		1:40
URINALS	K.6.	boys	1:15		1:35
ONT TAKES		girls		insufficient data	
	7-12	boys	1:15	Indetropolities and a	1:35
		girls		insufficient data	
LAVATORIES	K-6	boys	1:25		1:45
EAT AT ORIES		girls	same		same
	7-12	boys	1:30		1:50
		girls	same		same
DRINKING FOUNTAINS	K-6		1:30		1:50
minimum two per floor			1:40		1:60
SHOWERS	Pi	nysical education areas		1:3	
grades 7-12 only		Other areas		as needed	

*NOTE: Because the adequacy of plumbing fixture installations is so greatly affected by such variables as their location within the building, the ease or difficulty of supervision, and the nature of the educational program itself, no set fixture-pupil ratio can be established even for fixtures of the same type at the same grade level. The ratios presented here are the maximum that would be necessary in the most unsatisfactory condition (picture a three-story school with all the toilets in the basement and with a program that demands their use by all the pupils at the same time!, and the minimum that would be adequate when the planning is "ideal." The optimum for most schools would of course be very close to a mean between the two. In each case, the provision for initial segment enrollments should be considered as the base upon which time the ratio is applied.

INITIAL SEGMENT ENROLLMENTS

NUMBER (OF PUPILS	TOILETS	URINALS	LAVATORIES	DRINKING	FOUNTAINS
15 or less	bovs	1	1	1		
	girls	2	-	1		
16 to 35	boys	2	2	2	2	2
	girls	3	-	2	2	2

degrees F or less being admitted to the hot water lines. Of the commonly used types of controls, a single mixing valve at each shower head is recommended, preferably of the thermostatic type with a built-in volume regulator. Control valves for both junior and senior high school shower installations should be located about 45 in. above floor level.

Shower Heads

The shower heads themselves should be self cleaning and vandal resistant, and should have either adjustable heads or, better, a properly designed spray pattern that makes adjustability unnecessary. Since both boys and girls have an aversion to showers which wet the hair, the head should be mounted so that the stream hits at about shoulder height. To accommodate students who are shorter or taller than the "average" for their age, mounting heights may be varied within a single gang shower room. However, the previously mentioned heads which give a pre-determined spray pattern lessen the problem of mounting height as well as of adjustability. If heads are mounted on opposite walls, the shower room should be at least 10 ft wide.

Drains

It is essential that drains be located so that soiled water does not flow into an area occupied by another bather, and curbs should be limited and no-slip floors installed. Perimeter gutters, with domed screens to prevent damming, help keep water off the central floor.

Technical Roundup





"ASSEMBLY LINE" FOR PRECAST CONCRETE

There's been much talk of late about the advanced state of concrete technology in Europe and the U.S.S.R., and particularly about the assembly line methods that have been developed for producing precast and prestressed components. However, a closer look at some home-grown concrete products reveals manufacturing methods that rival the best the continent has to offer.

For example, the West Allis Concrete Products Company of Milwaukee, Wis., is operating a largely automatic production line with a capacity of up to 9000 sq ft of precast, pretensioned roof and floor slabs per day. Essentially sandwiches with dense layers of sand-and-gravel concrete on either side of a lightweight

concrete "filling," and nine hollow cores within their 40 in. width, the slabs are produced by a casting machine that straddles several tension beds, extruding concrete over pretensioned wires as it moves down the production line at the rate of 4 ft per minute. About the size of a small house, it is supplied with raw materials by a fork-lift truck and internal hoisting machinery, and with power by a "third rail" at one side of the beds. The high strength concrete used makes it possible to cast full beds seven planks high in seven consecutive days, and to mix standard four, six, and eight inch slab thicknesses. Planks are sawn to length before being removed from the casting beds.

PRESTRESSED SLABS ROOF FLORIDA CHURCH

After investigating several roof systems, with particular attention to their fire ratings and ability to hold up in the Florida climate, architects Herbert S. Johnson and Charles F. McAlpine, Jr. decided to roof a lowbudget parish hall-church and classroom wing in the Fort Lauderdale area with precast, prestressed concrete slabs. The flat slabs selected had the advantage of being suitable for both medium and long spans, and, in addition, gave the simplicity of form, ease of erection and low onthe-job labor costs that the architects were looking for. For the parish hall, they were laid from foundation to peak so that they form both roof and side walls; and were overlapped so that they provide a pleasant rhythm over the large area while correcting visually any differences in camber caused by variations in prestressing. In the classroom wing, similar 4-ft slabs were used to span from cross wall to cross wall, parallel to the ridge. The roof slabs for both buildings were joined by welding metal inserts set in place during casting.







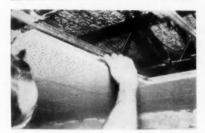
PRECAST WINDOW WALLS CUT SCHOOL COSTS

Also in Florida, Frank H. Shuflin and Associates have developed a precast concrete window-wall unit that has helped to pare costs on several schools in the Miami area. Their most obvious cost advantage lies in the repetitive use of a standard manufactured element. (To date, over four hundred of the frames have been cast in a steel form that originally cost \$1500.) However corollary savings have also stemmed from the increased speed and ease of installing the precast units.

The frames themselves not only incorporate spandrels, mullions and muntins, but are also used to form the sides of the concrete columns and

the bottom of the continuous perimeter beams. At the Douglas Elementary School (shown), they are set in a module of roughly 8 ft, with slightly less than a foot between adjacent frames. When set in place, the units form a series of "shadow boxes" designed to receive standard glass jalousies on the inside face, and horizontal aluminum sun vanes on the outside face. These sun vanes serve as a shield against sky glare, develop a natural source of indirect light and eliminate interior blinds. They also help to cool the classrooms by guiding breezes in-and keeping the direct sun out.

more roundup on page 250



Two Hour Fire-Rated Acoustical Tile Ceiling

An acoustical tile ceiling designed to provide effective fire protection for structural steel members and floor assemblies has been given a twohour fire rating by Underwriters' Laboratories. As a rule, mechanically suspended acoustical tile ceilings do not prohibit the passage of flame and heat to areas above the ceiling, even though the tile itself may be incombustible. Consequently most codes have required that acoustical tile be used with reinforced concrete or fireproofed steel, or backed by an intermediate fire-stop. The new Acoustical Fire-Guard tile can, however, be suspended directly from bar joists or carrying channels with only a 10-in. air space between it and the structural floor or deck, thus elimi-

ing marble into thinnesses of as lit-

tle as 1/2 in. has led to the introduc-

tion of a fully insulated, marble-

faced wall panel that is said to

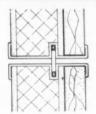
weigh up to 50 per cent less than

standard marble veneer. Developed

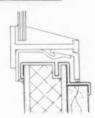
jointly by the Vermont Marble Co.

and the Maul Macotta Corp., the new

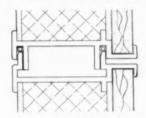
nating one step in the construction procedure. The heart of the Fire-Guard system is a dense mineral fiber tile with a special tongue, groove and kerfed edge that permits interlocking of the tiles. Each tile rests on a clip spline that has been snapped onto main runners, which are installed on 12-in, centers and attached to the carrying steel with clips placed at nominal 4-ft intervals. The new system gives a noise reduction coefficient of .75, or about that of a standard mechanically suspended incombustible tile ceiling. At present the tile is available in a random perforated pattern only, but more designs are expected to follow shortly. Armstrong Cork Co., Lancaster, Pa.







Window Wall Panel



Flush Mount Panel

Marble-Faced Insulating Sandwich Panels A three-year-old technique for slic-

Vermarco Panel-Wall consists of marble "tiles," each 1 ft square and 1/2 in. thick, bonded to 1/8-in. asbestos-cement board which in turn is bonded to a rigid, lightweight insulating core. The interior facing, also of asbestos-cement board, can be painted or covered with a wide variety of materials-including marble. An aluminum frame permits positive mechanical fastening and includes a built-in weatherstop and expansion seal. If desired, it can be anodized to blend or contrast with the marble facing. Three types of panels will be available initially: the Series 100 flush mount panel for opaque curtain and panel walls, the Series 200 grid wall panel, and the

Miniature Dimmer for More Effective Light Control

The silicon controlled rectifier, a tiny semiconductor no bigger around than a dime and less than 15% in. long, has made possible substantial reductions in the size, weight and cost of the CEN-TROL electronic dimmer system-with no corresponding reduction in efficiency. In fact, its performance is said to rival and even surpass those of other devices for dimming large lamp loads. Because the C-CORE rectifier is activated instantly by as little as .015 watts, no warm-up time is required. The system has an indefinite load dimming ratio from maximum rating to zero; operates with no overdrive, no surge, no drift, and no dip during cross fading; and gives complete dimming to blackout. Operation is smooth and quiet, and there is no significant radiant heat problem. In addition the reduction in bulk, heat and noise makes it possible for the *C-CORE* dimmer chassis to be located very close to the lighting instrument it will control, thus measurably reducing long heavy individual cable runs. (The cable that connects the dimmer chassis to the centrally located console is only No. 18 wire.) The chasis itself measures 6 by 6 by 6 in. and weighs about $4\frac{1}{2}$ lbs. *Century Lighting, Inc.*, 521 West 43rd St., New York 36, N. Y.

more products on page 266



Series 300 window wall panel. Ver-

mont Marble Co., Proctor, Vt.



Unit: A Manual of Design (A.I.A. 19-B-3) Drawings a

(A.I.A. 19-B-3) Drawings and photos of typical glued laminated wood structures are followed by design procedures, load tables, connection details, etc. for two- and three-hinged arches, buttressed segment arches, laminated purlins and laminated beams. Information on the fabrication of *Unit* laminated wood members, guide specifications, and a color selection chart are also included. 28 pp. *Unit Structures*, *Inc. Peshtigo*, *Wis.*

Roll-O-Matic Air Filter

Bulletin 248-C describes construction and operating characteristics of the new Model "B" Roll-O-Matic automatic renewable-media air filter. 12 pp. Dept PD, American Air Filter Co., Inc., 215 Central Ave., Louisville 8. Ky.

Concreting of Airport Pavements

. . . and Structures discusses role of Pozzolith in meeting high concrete requirements for nine major airport projects. 20 pp. The Master Builders Co., 7016 Euclid Ave., Cleveland 3, Ohio

Steel Doors and Frames

Shows standard types and sizes, and gives specifications for models in the *Commercial* and *Commodity* lines of steel doors and frames for commercial, institutional and residential installations. 20 pp. *Amweld Building Products*, 604 Plant St., Niles, Ohio

Installed Vacuum Cleaning Systems

Catalog 160 includes detailed information, along with illustrations and descriptive diagrams, on installed vacuum cleaning systems for institutional, civic and municipal buildings. 8 pp. Spencer Turbine Co., Hartford, Comm

Centrifugal Roof Ventilators

Describes construction features, capacities, noise levels and accessories of new line of centrifugal roof ventilators. 8 pp. American Blower Div., American-Standard, Detroit 32, Mich.

Sound Insulation of Wall, Floor

. . . and Door Construction, the second supplement to National Bureau of Standards Building Materials and Structures Report 144, contains sound insulation data for twenty-eight building constructions measured at the Bureau between July 1955 and December 1956. The accuracy of the figures is discussed, and details are given on the "Energy Average," a new average figure for

the overall sound insulation of a panel which is designed to supersede the "Decibel Average." BMSR 144, 40¢; 1st supplement, 5¢; 2nd supplement, 10¢. Superintendent of Documents, U.S. Government Printing Office, Washington 25, D. C.

Lightning Facts and Figures

Explains in detail how lightning "happens"; how often it is likely to strike in a given area; and how individuals as well as structures can be protected from lightning loss or damage. Lightning Protection Institute, 53 West Jackson Blvd., Chicago 4. Ill.

Thru-Vu Vertical Blinds

(A.I.A. 35-P-3) Describes, illustrates, and gives installation details and specifications for *Thru-Vu* vertical blinds. 4 pp. *Thru-Vu* Vertical Blind Corp., 113 Calvert St., Harrison, N. Y.

ASTM Standards on Cement

Compiles up-dated standard specifications, methods of test and definition of terms. Appendices contain a Manual of Cement Testing, a list of selected references, and a discussion of analytical balances and weights. 278 pp. \$3.50. American Society for Testing Materials, 1916 Race St., Philadelphia 3, Pa.

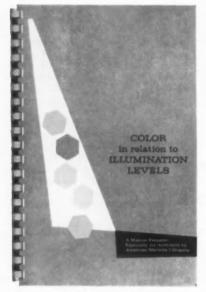
Lighting for Hotels

Lighting guidebook discusses problems of lighting guest, employe and public areas of hotels and motels, and gives suggested solutions. Other topics include: types of bulbs and fluorescent tubes, use of color, maintenance and cleaning of lighting installations, and economics of good lighting. 40 pp. Single copies, 70¢. Publications Office, Illuminating Engineering Society, 1860 Broadway, New York 23, N. Y.

Architect's Manual

. . . on Flooring Products (A.I.A. 23-G) gives complete specification information on resilient tile flooring, including approximate installed costs, applicable Federal Specifications, wearing qualities, characteristics, properties, etc. Subfloor conditions and specifications are reviewed along with installation and maintenance data, and special charts show recommended adhesives, static load data, acoustical properties and light reflectivity values for various types of floor tile. B. F. Goodrich Co., Flooring Products, Watertown 72, Mass.

* Additional product information in Sweet's Architectural File, 1958 more literature on page 294



Color in Relation to Illumination Levels. (A.I.A. 25-B-21) discusses the selection of paint colors in relation to their appropriateness and compatibility with low and high footcandle levels. A suggested palette of colors for low illumination areas is supplemented by a discussion of the colorimetric basis for their selection and by examples of suitable color schemes. A similar color palette for normal and high illumination areas is followed by illustrations of typical color applications in those areas and by a discussion of the relation between illumination and paint-color appearance. Packets of chips from both color palettes are included. American-Marietta Paint Div., 101 East Ontario St., Chicago 11, Ill.



OWNER: UNITED AIR LINES - GENERAL CONTRACTORS: HUMPHREYS & HARDING, INC. - APCHITECT: SKIDMORE, OWINGS & MERHILL - ALUMINUM MATERIALS; KAISER ALUMINUM AND CHEMICAL SALES,

United Air Lines' \$10-million passenger terminal

features Architectural Metals by North American

Architectural metals made by North American Aviation are a distinctive feature of the new United Air Lines Passenger Terminal at New York International Airport—modern as jet-age travel—which will be put into use in September of this year.

North American curtain wall encloses the two-level structure, which stretches 691 feet and covers 4½ acres of floor space. Concourses lead to 16 gate positions. A 25-foot overhang running the length of the building enhances the beauty of this terminal.

North American fabricated and erected the panels, mullions, fascias, and doors which enclose the exterior. The twenty-eight-foot column covers—manufactured in one piece from aluminum sheets 28 feet long and 77 inches

wide—represent a unique manufacturing accomplishment. North American also is making and will install the interior ornamental metal work, including decorative metal used on balcony railings, escalator enclosures, and columns.

North American Architectural Metals are custom-designed—yet they are economical, easy to erect, enduring. They are equally adaptable to simple one-story structures and towering landmarks.

When an architect specifies North American Architectural Metals, he is free to design a building that is functional, esthetically pleasing ... and exciting. That's because North American's design and engineering department knows how to help him find practical solutions for any structural metal problems.

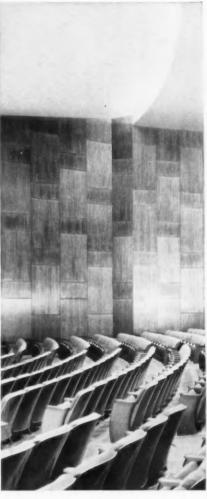
ARCHITECTURAL METALS

THE COLUMBUS DIVISION OF NORTH AMERICAN AVIATION, INC.



Design ideas really come to when you call on the





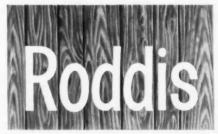
RODDIS DOORS for Chicago's Prudential Building — 2100 of them were used in this great skyscraper, including those in the offices of Household Finance Corp., pictured here. Roddis Doors are available primed and sealed for protection, finer finishing—or, like doors of the Prudential Building, completely prefinished to sample. Famed for quality and beauty, Roddis Doors aid creativity with a limitless choice of domestic and imported woods. Roddis offers one source for all your wood door needs—solid and B-label fire doors, guaranteed for life; hollow core and X-ray doors.

RODDIS HARDWOOD PANELING graces Johns Hopkins University's Shriver Hall. (Buckler, Fenhagen, Meyer and Ayers, Architects.) Choice, handselected walnut veneers of rich grainings, painstakingly sanded to flat smoothness, make this Roddis

Doors . . . hardwood paneling . . . Craftwall . . . fine woods for every application. For over 60 years, Roddis has been working with America's leading architects.

238

life craftsmanship of







installation exceptionally beautiful. You'll find a vast variety of woods in standard panels to fit your ideas quickly. Custom panelings? Roddis is a specialist in this area . . . able to provide practically any design in wood with beautiful veneers perfectly matched for the desired effect.

RODDIS CRAFTWALL paneling in Rib Room, Hotel Roosevelt, New York, gives diners home-like warmth. Professionally prefinished, Craftwall has a rich, hand-rubbed look. Resists scuffs, stains and dirt. Ideal for any installation, commercial, institutional or home. Nine woods provide broad design possibilities: maple, cherry, Pastel Cherry, elm, birch (2 tones), oak, Sherwood Oak, walnut. The ½" panels come in standard sizes, special sizes, and in fire-retardant construction. Roddis guarantees Craftwall wood paneling in writing for the life of the installation.

FOR FURTHER INFORMATION SEE SWEET'S ARCHITECTURAL FILE, OR WRITE TO RODDIS PLYWOOD CORPORATION, MARSHFIELD, WISCONSIN

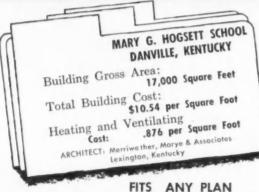
Norman Classroom-Packaged System

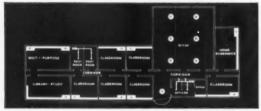
HEATS AND VENTILATES

with TRIPLE Economy









Versatile Norman Schoolroom Heating and Ventilating Systems answer the needs of classrooms large or small. 85,000 or 100,000 BTU/hr inputs are available. Util-i-Duct Bookshelf Sections add work surface and storage space; then Wall-i-Duct Sections save room space.

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Pre-wired, partially assembled Norman Heating and Ventilating Systems are quickly installed room by room. In new schools, like the Mary G. Hogsett school, Norman Systems eliminate expensive boiler rooms, chimneys and tunnels. The \$0.876 figure is typical of the low installation costs being realized across the nation. Norman economy grows with the school . . . individual classroom systems are added as required without costly revamping of central system.

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Norman Schoolroom Heating and Ventilating System:

- Maintains uniform temperature without wasting fuel
- Supplies heat only when needed . . . ventilates automatically
- Each classroom's comfort needs are answered accurately, independently of other rooms.

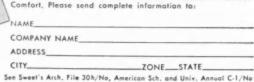
ECONOMY OF MAINTENANCE

Long trouble-free service is assured by sturdy construction, finest materials and latest A.G.A. approved controls — standard to the industry.

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We want to learn more about Norman Products for School

STRUCTURAL STEEL COMPOSITE BEAMS: 1*

By ELWYN E. SEELYE

Usage

Composite construction is used to take advantage of the extra strength of an I beam integrated with a concrete slab. It has been used on highways very extensively. It has been used less frequently but with success on buildings where the integration is obtained by shear connectors welded to the flange of the beam. The saving in structural steel might run from 25% to 40%. The actual economy depends on an economic study but is substantial, even after taking into account the cost of the integration.

Design Criteria for

Composite Construction for Buildings

- 1. Width of slab effective as T-flange is taken as the least of the following values:
- (a) ¼ span length of beam
- (b) The distance center to center of beams
- (c) 16 times the least thickness of the slab

For fully encased beams, the effective width may be taken as 16 times the least slab thickness plus the stern width.

Full shoring is supplied, so that the composite section carries both dead and live loads. In actual practice, if the shores are omitted, the safety factor on ultimate strength will not be changed.
 The allowable load on the shear connectors is based on their useful capacity with a safety factory of 2.4.

Design Steps in

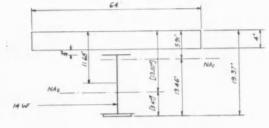
Composite Construction for Buildings

- Choose a trial section composed of concrete slab thickness, steel beam, and steel caver plate.
- 2. Compute neutral axis of steel section.
- 3. Compute moment of inertia of steel section about its own neutral axis.
- Compute neutral axis of total steel section plus transformed concrete area.
- Compute moment of inertia of total steel section plus transformed concrete area about its neutral axis.
- 8. Compute section moduli for steel and concrete in composite section.
- 7. Compute extreme fiber stresses in steel and concrete.
- 8. Compute length of cover plate. Steps 4, 5 and 6 must be repeated, omitting the cover plate from the calculations.
- 9. Design the shear connectors.

NOMENCLATURE

- Y = distance from top of slab to neutral
- axis of combined steel beam and plate

 Y = distance from top of slab to center line
 of steel area listed
- Ay = moment of area about top of slab
- lo = moment of inertia of steel about its
- own axis
- Ss = section modulus of steel
- Se = section modulus of concrete
- fs = extreme fiber stress of steel
- fc = extreme fiber stress of concrete
- h = horizontal shear
- V = total shear (end reaction)
- Q = statical moment of steel beam about that portion of cross section of composite section lying above steel beam



Dimensions shown thus [] are computed values

- PROBLEM: Given: Beam moment = 192 foot-kips
 - Design: Composite beam.

STEP 1

14 WF 30 with $5\times3/4$ bottom cover plate. 3/4 haunch between top of beam and bottom of concrete slab.

STEP 2

Member	Area	Y	Ay
Plate 5 × 3/4	3.75	19.0	71.2
14 WF 30	8.81	11.68	103.0
	12.56		174.2
у =	$\frac{174.2}{12.56} = 1$	3.9"	

STEP 3

Byl₀ +
$$\Sigma$$
Ay²
l₀ (14 WF 30) = 289.
Ay² (14 WF) 8.81 × $\overline{2.19}$ ² 42.

STEP 4

Take moments about top of slab.

Transformed area of slab = $\frac{64 \times 4}{10}$

$$kd = \frac{12.56 \times 13.9 + \frac{64 \times 4}{10} \times \frac{4}{2}}{12.56 + \frac{64 \times 4}{10}} = \frac{174.5 + 51.2}{12.56 + 25.6} = 5.91^{\circ}$$

STEP 5

STEP 5 I of transformed slab area about $NA_c(1 = \frac{bd^3}{2})$

+ Ay² (steel beam + plate)

+ 1 s (steel beam + plate)

1 composite =
$$\frac{64}{3 \times 10}$$
 (5.91³ - 1.91³) + 12.56 × 7.96² + 429
= 425 + 796 + 430
= 1651

STEP 6 STEP 7
$$S_{s} = \frac{1658}{13.46} = 122.7 \qquad f_{s} = \frac{192000 \times 12}{123} = 18700 \text{ psi}$$

$$S_{c} = 10 \times \frac{1651}{5.91} = 2790 \qquad f_{c} = \frac{192000 \times 12}{2800} = 823 \text{ psi}$$

^{*} From material soon to be published in a new edition of "Design, Data Book for Civil Engineers" by John Wiley & Sons, Inc.



Our community needs a new school.



We need it in a hurry.



We want a sturdy, attractive building.



We want fire safety for our children.



We want a building that's easy to add on to.



We want a flexible floor layout.



And we want to keep the cost low.



Now, what structural material do you recommend?

How to give the community what it wants: Recommend framing the school building with structural steel. Only steel framing meets all these demands. Both steel producers and steel fabricators have expanded facilities. There's an ample supply of the fabricated structural shapes you need -- when you need them.

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On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation. Exp



STRUCTURAL STEEL COMPOSITE BEAMS: 2*

By ELWYN E. SEELYE

STEP 8

The theoretical length of cover plate is determined from the parabolic moment curve by the given equation where

I = span length

 $S_{\rm g}$ = section modulus of composite section plus plate

 $S_0 =$ section modulus of composite section without plate

I' = theoretical length of cover plate

The actual length of the cover plate should extend 11-0th beyond the theoretical points of cut-off.



Repeat STEP 4 - Without Plate

Total depth of section = 4.75 + 13.87 = 18.62 nd Distance from top of slab to £ of steel beam = 4.75 + 6.93 = 11.68 nd

$$kd = \frac{8.81 \times 11.68 + \frac{64 \times 4}{10} \times \frac{4}{2}}{8.81 + \frac{64 \times 4}{10}} = 4.48$$

No Plate $Q = \frac{64 \times 4}{10} (4.48 - 2) = 58.5$

With Plate Q = 25.6(5.84 - 2) = 98.4

Repeat STEP 5

$$I = \frac{64}{30} \left(\overline{4.48}^3 - \overline{0.48}^3 \right) + 8.81 \times 7.20^2 + 289$$

= 938

Repeat STEP 6

$$S_0 = \frac{938}{(18.62 - 4.48)} = 66.3$$

Length of cover plate for a 30 ft. beam = $30\sqrt{1 - \frac{67}{123}} = 20.4$

Use plate length = 221 - 3"

STEP 9

The horizontal shear per unit length of beam $=H=\frac{VQ}{I}$.

The spacing of shear connectors equals the total working capacity of the connectors divided by the horizontal shear per unit length of beam. Thus $S = \frac{UC}{SC} \times \frac{1}{SC}$

Given: Beam length = 30'-0"

End reaction = 25.5 kips

Use: 2-3/4 \u03c4 stud shear connectors.

Working load for 2 studs = $2 \times 4.25 = 8.5$ kips.

(See following table for values.)

Maximum V at end of beam = 25.5 kips
$$S = \frac{8.5 \times 938}{25.5 \times 58.5} = 5.3^{\text{th}}$$

V at
$$4^{1}$$
-0" = 18.75 kips S = $\frac{8.5 \times 1658}{18.75 \times 98.4} = 7.64^{\circ}$

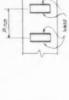
V at
$$7^{1}$$
-0ⁿ = 13.70 kips $S = 7.64 \times \frac{18.75}{13.70} = 10.5^{n}$

V at
$$10^{t}$$
- 0^{tt} = 8.6 kips S = 7.64 × $\frac{18.75}{8.6}$ = 16.7^{tt}

Use the following pitch of connectors: 4'-0" at 5", 4'-6" at 7½", balance at 12".

TABLE A - CHANNEL CONNECTORS

Channel	Work			ired Le or 1 in.			1		
Type	Concrete Strength, p.s.i.				Weld	Concrete Strength, p. s.i.			
3120	2500	3000	3500	4000	Size, in.	2500	3000	3500	4000
Am. Std. 3" U 4.1# 5.0# 6.0#	1730 1910 2080	1900 2090 2280	2050 2260 2460	2190 2420 2630	1/2	.98 1.08 1.18	1.08 1.18 1.29	1.16 1.28 1.39	1.24 1.37 1.49
4" ⊔ 5.4# 7.25#	4# 1890 2080 2240 2390 1/4 1.07 1.1	1.18	1.27	1.35					
Car and Ship 3" 47.1#	2050 2400	2250 2630	2430 2840	2600 3040	1/4 2/16 1/4 1/4 1/4	1.16 .78 .58 1.36 .91	1.27 .85 .64 1.49 1.00	1.37 .92 .69 1.61 1.08	1.47 .99 .74 1.74 1.15
4"⊔ 13.8#	2930	3210	3470	3710	3/16 3/16 1/4 5/16 3/1	1.66 1.11 .83 .67	1.82 1.22 .91 .73	1.96 1.35 .98 .79	2.10 1.41 1.05 .84





^{*} From material soon to be published in a new edition of "Design, Data Book for Civil Engineers" by John Wiley & Sons, Inc.



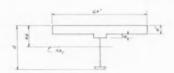
LOWER OPERATING COSTS

STRUCTURAL STEEL COMPOSITE BEAMS: 3*

By ELWYN E. SEELYE

TABLE D - SECTION MODULUS S_s AND S_c FOR GIVEN BEAMS

These tables have been figured for 3000 p.s.i. concrete, n = 10.



Section	Steel Weight, 1b./ft.	1	Kd	d – Kd	S,	Sc
14WF30	_ 30	938	4.48	14.13	66.3	2095
14WF30 6x1P	54.4	2030	6.64	12.97	156.7	3060
14WF43	43	1241	5.17	13.26	93.6	2400
14WF43 6 x 1 RL	63.4	2220	7.04	12.39	179	3155
14WF61	61	1669	6.0	12.66	132	2780
14WF61 6 x 1 RL	81.4	2585	7.58	12.08	214	3415
14WF78	78	2042	6.61	12.20	168	3095
14WF78	98.4	2900	8.02	11.79	246	3620
16WF36	36	1333	5.11	15.49	86	2610
16WF36 9×1FL	66.6	3178	8.29	13.31	238	3620
16WF40	40	1481	5.38	15.37	96	2755
16WF40 9 x 1 PL	70.6	3311	8.46	13.29	249	3910
16WF50	50	1792	5.96	15.04	119	3010
16WF50	80.6	3568	8.80	13.20	270	4050
16WF 64	64	2122	6.55	14.20	149.5	3240
16WF 64 6 x 1 PL	84.4	3263	8.28	13.47	242	3940
18WF50	50	2126	6.29	15.46	129	3380
18WF50	80.6	4242	9.38	14.37	296	4520
18WF 60	60	2493	6,84	16.16	154	3640
18WF60 9 x 1 RL	90.6	4559	9.70	14.3	319	4700
18WF 64	64	2558	6.93	15.69	163	3690
18WF64	91.2	4340	9.4	14.22	305	4610
21WF62	62	3228	7.52	18.22	177	4300
21WF62 10 x 1 RL	96	6087	10.97	15.77	386	5540
21WF82	82	3941	8.4	17.21	229	4700
21WF82 8 x 1 FL	109.2	6106	10.85	15.76	388	5620
24WF76	76	4709	8.85	19.81	238	5315
24WF76 8 x 1 PL	103.2	7540	11.76	17.9	421	6410
27WF94	94	6790	10.4	2126	320	6530
27WF94 8 x 1 PL	121.2	10086	13.25	19.41	518	7600

Intermediate cover-plate sizes may be obtained by interpolation.

EXAMPLE: Find cover-plate size for a 14 WF 30 that will provide a steel section modulus of 130 in.³

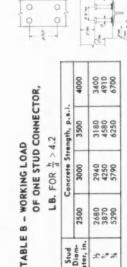
-66.3 63.7 = Req'd S_S $6.0 \times \frac{63.7}{90.4} = 4.23$ Area Req'd

Since this ratio is dependent on plates of equal thickness, use $4\frac{1}{2}^n\times 1^n$ R.

TABL	E C.	SPIF	SAL O	ONNE	TABLE C - SPIRAL CONNECTORS				
Spiral	Work	Working Load Per Weld	nd Per	Weld	Effe	in. p	Effective Length of Weld, in. per Pitch	Sh to	d,
Diam-	Concr	Concrete Strength, p.s.i.	ength,	p. s. i.	Weld	Conci	Concrete Strength, p.s.i.	ength,	p.s.i.
efer, in.	2500	2500 3000 3500	3500	4000	Size, in. 2500	2500	3000	3500	4000
x	5650	5920 6150	6150	6360	1/4	1.05	1.05 1.10 1.14 1.18	1.14	1.18
8	7070	7400	7400 7690	7950	8,46	1.18	1.23	1.28	1.33
*	8480	8480 8880 9220 9540	9220	9540	27/8	1.12	1.17	1.21	1.25





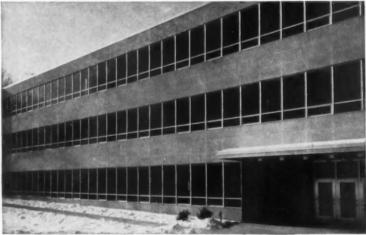


^{*} From material soon to be published in a new edition of "Design, Data Book for Civil Engineers" by John Wiley & Sons, Inc.



New Library Addition, Kent State University, Kent, Ohio, has windows of American Lustragray glare reducing glass. Architects: Fulion, Krinsky & Dela Motte, Cleveland. Glazier: Toledo Plate & Window Glass Co., Cleveland.





WSW 7396

Another installation of AMERICAN Lustragray...

the glass that reduces sun glare and heat without sacrificing vision

A modern library is a place for reading—and here at Kent is the ultimate in eye comfort by the use of controlled daylighting through American Lustragray glass. Students say, "It's just like studying out-of-doors in the shade." This gray glass softens glare from the snow; subdues the direct glare and heat of the sun. These same advantages are desirable in classrooms. And that is why American Lustragray is being specified by school architects for their newest buildings. The attractive, highly lustrous appearance Lustra-

gray glass gives to the exterior of new buildings is also a reason for its tremendous acceptance. Lustragray provides all these features economically.

On new construction, get the benefits of Lustragray.

AMERICAN WINDOW GLASS DIVISION

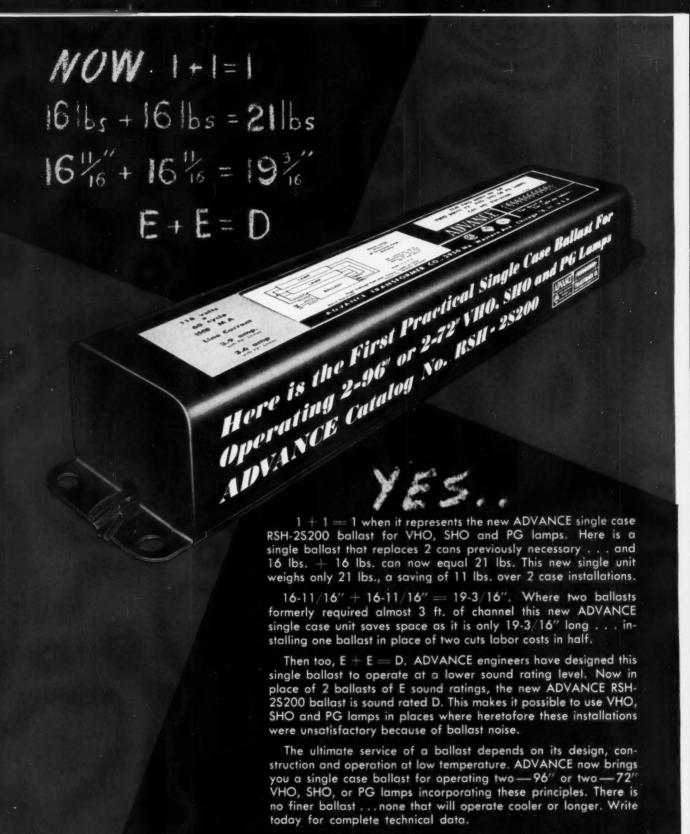


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General Offices: FARMERS BANK BUILDING . PITTSBURGH 22, PA.

AMERICAN-SAINT GOBAIN CORPORATION is a merger of the former American Window Glass Company, Pittsburgh, Pa., and the former Blue Ridge Glass Corporation, Kingsport, Tenn. (which was a wholly-owned subsidiary of Saint-Gobain of Paris, France). American Window Glass Division plants are located in Arnold, Jeannette, Ellwood City, Pa.; Okmulgee, Okla. Blue Ridge Glass Division plant is located in Kingsport, Tenn.



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ADVANCE"

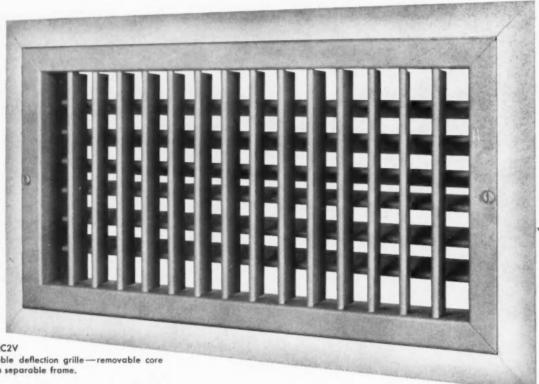
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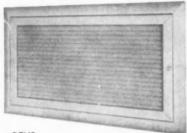
TRANSFORMER CO.



Now... WATERLOO presents removable core grilles



Double deflection grille - removable core with separable frame.



"No-Site" inverted V shaped blades with removable core and separable frame.



Return air grille with fins fixed at 45° with removable core and separable frame.

Completely removable coresunique design separable frames

Designed to enhance all modern interiors, these new Waterloo removable core grilles offer many significant advantages:

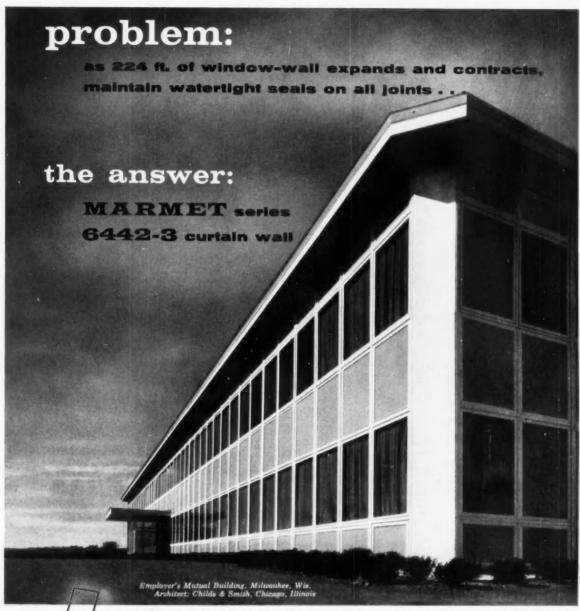
- 1. Cores slip out easily—prevent damage to plaster or painted walls.
- 2. Unique design separable frames allow maximum free area. Trim radius edges of frames add streamline appearance to room decors.
- 3. Removable core grilles are either all aluminum construction or separable aluminum frames with conventional cores. Either type may be spe-

4. Waterloo removable cores are available with models shown or on any other Waterloo supply and return grilles or registers.

Reap these benefits by specifying Waterloo removable core grilles on your next job. Write for new comprehensive Waterloo Catalog.



WATERLOO REGISTER COMPANY, INC. WATERLOO, IOWA



look how fast it goes up...look at the results!

Typical of the single and double level buildings for which the 6442-3 series is designed, this office building has large horizontal dimensions in which the cumulative effect of expansion and contraction is considerable.

Its glistening sheath is a group of interlocking frame sections, each of which can be quickly erected by two men.

Mortise and tenon joints are connected with bolts, carefully concealed by the glass race (or snap-on glazing bead where specified), to provide a flush plane and tubular appearance. These mating sections are

weatherstripped where feasible, and all peened joints are internally sealed with a special compound injected under a pressure of 800 lbs. per square inch.

With single or double weatherstripping, this window wall has proven watertight and structurally sound in winds of hurricane velocities. Special expansion joints at the proper intervals absorb the cumulative effects on the long horizontal span. Whatever your curtain wall problem may be . . . structurally or esthetically . . . Marmet design engineers have the answer . . . just write or call.

MARMET Corporation

For detailed specifications on the complete line of MARMET products — consult Sweet's Catalog File No. 30 or write to MARMET for Catalog 59a, 59c, and 59d. Mor

300-C Bellis Street, Wausau, Wisconsin

Technical Roundup

continued from page 234

Vierendeel Trusses Provide Truck Area in New Telephone Building

The steel structure for a new ten story addition to the Mountain States Telephone Building in Denver, Colorado, includes Vierendeel trusses which provide unobstructed areas for ground level garage space, and beam-column connections which permitted the use of fast iron powder electrodes.

Since the ground floor truck area had to be free of columns that would obstruct free movement of vehicles. and since diagonal stiffeners in the area above could not be tolerated, the designers chose Vierendeel trusses as the means of supporting the nine stories over the garage. Two were required to provide adequate depth. The trusses, each approximately 32 ft long and 191/2 ft high, arrived at the job site completely shop welded and ready for erection. They were then placed on top of columns which rose from the underground levels, and tied to the old building and to other steel work in the new addition. Their use resulted in a column-free area about 30 ft wide and 60 ft long.

The rest of the steel work was al-

so fabricated and erected with welding. At joints where beams joined the column webs, tee sections were welded inside the column, forming what amounted to a box section. Standard "A" connections on the beams were field bolted to the columns with high strength bolts which served as erection fasteners and were left in place to carry the shear load at the joint. The welded connections, which were used to take wind and distributed moments, join the beams to the columns through connection

plates on the top flange and direct butt joints on the bottom flange. This joint design made it possible for all welding to be done in the flat position, which in turn reduced welding costs by (1) permitting the use of high-speed iron powder electrodes, and (2) eliminating time-consuming out-of-position welding.

The architects for the project were Raymond Harry Ervin & Associates; consulting engineers were Phillips-Carter-Osborn, Inc.

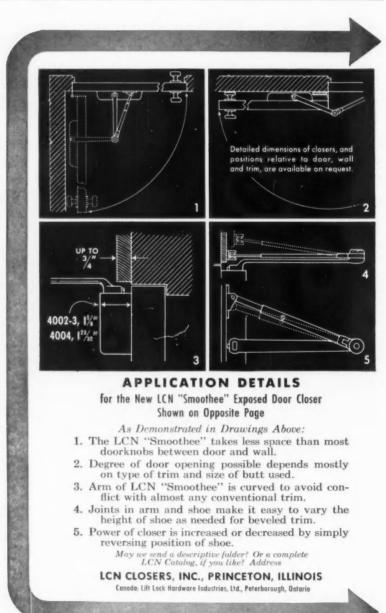
more roundup on page 254



Second of two Vierendeel trusses goes into position against original building



Tee section welded to web and flanges makes column a box section at connection





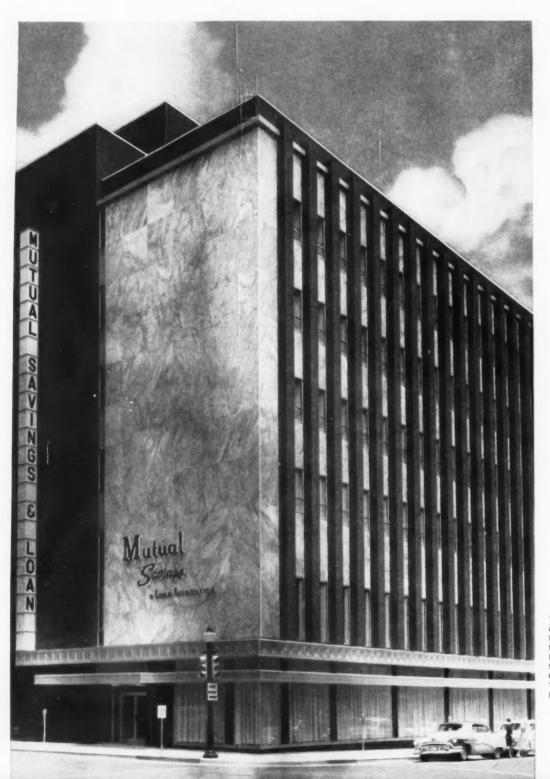
LCN CLOSERS, INC., PRINCETON, ILLINOIS

Graham, Anderson, Probst & White, Inc.
Architects — Engineers

A. Dudley Kelly, A.I.D. Interior Designer



So easy on the eyes of



This handsome new bank and office building in Fort Worth, Texas, houses the Mutual Savings & Loan Association. Architect: Preston M. Geren. Consulting Engineer: Yandell, Cowan & Love Engineering Co.

Texas...

Curtis Visioneers provided high levels of illumination, Eye-Comfort diffused lighting . . . blending with modern low-ceiling architectural design . . . at Fort Worth savings and loan company

An office where banking transactions are made has a special need for lighting that assures visual acuity. Fort Worth's Mutual Savings and Loan Association was faced with this problem: how to achieve modern low-ceiling construction, yet obtain high levels of illumination without objectionable shadows or glare. Solution: Drawing from a wealth of experience, Curtis created a continuous luminous ceiling through use of Strato-Lux. Result: a lighting system compatible with the modernistic low-ceiling design of the building -that provided high intensity lighting with even-panel illumination . . . yet delivered low brightness quality. No glare, no distracting shadows or eye strain. Using standard products, with slight modifications to satisfy your job requirements, when necessary, Curtis visioneers can assist you, whatever your commercial lighting needs. So write today for the name and address of the Curtis Visioneer in the principal city nearest you. Curtis Lighting, Inc., 6135 West 65th St., Chicago 38, Ill. In Canada: 195 Wicksteed Ave., Toronto 17 Canada.



Curtis Strato-Lux provides high levels of glare-free illumination to promote efficiency and serenity. Exceptionally low ceiling brightness is achieved through use of #6025 Holophane acrylic plastic Controlens.



Even with Strato-Lux directly overhead, there are no bright spots, no reflections, in critical viewing areas. Acrylic plastic panels never discolor, can be slipped out one at a time and dipped in detergent for cleaning.



Visioneers in Planned Lighting



Two compact, efficient. automatic CB boilers heat five new buildings for International Minerals and Chemical Corporation

Precision and quality are a must for this company which produces minerals and chemicals for industry and agriculture. It's an attitude that carries over to the equipment they buy. That's why they installed two 100-hp Cleaver-Brooks boilers to heat their dramatic new headquarters at Skokie, Ill.

According to Callix E. Miller. A.I.A. Project Manager for IMC. "Our Cleaver-Brooks automatic packaged boilers are efficient and quiet." He added, "Their styling and performance are in keeping with functional design that characterizes our new headquarters."

W. J. Mullineaux, Plant Engineer, reports, "Cleaver-Brooks fourpass, forced-draft design has proved it can keep our operating costs low. The CB boilers fit in well with the automatic system we have and simplify our entire operation. Hinged doors make routine inspection easy."

Architects and Engineers on the job were Perkins and Will. Builder was Turner Construction Com-

For complete information on Cleaver-Brooks packaged boilers like those installed at IMC, contact your representative or write direct to Cleaver-Brooks Co., Dept. C, 362 E. Keefe Ave., Milwaukee 12, Wisconsin, U.S.A.



IMC headquarters buildings that are heated by CB boilers include the operations building and annex, administrative building, and employees' lounge-cafeteria



Technical Roundup

New "Float" Process Promises Better, Cheaper Glass

When a Briton calls a new glassmaking process "the most fundamental, revolutionary and important of all the advances in glassmaking of the present century," it must be so. And certainly the "Float" process recent-ly announced by Pilkington Brothers, Ltd., British flat glass manufacturer, does seem to hold promise of making available an improved glass for building and other uses.

Essentially the process consists of floating a continuous ribbon of glass on a bath of molten metal in a controlled atmosphere. The finished Float Glass emerges from this bath "exceptionally" parallel and free from distortion, with fire polished surfaces which, according to Pilkington Bros., are of better quality than can be produced by grinding and polishing. Since the process is also expected to reduce manufacturing costs, Float Glass should eventually be not only better, but cheaper as well. It is currently available in limited quantities through outlets in Great Britain and overseas.

ARI Certifies Unitary Air Conditioning Equipment

Thirty-three of the nation's leading manufacturers of unitary air conditioning equipment, representing more than 80 per cent of the total U.S. production of such units, have signed contracts to participate in a certification program guaranteeing to the architect that units bearing a "Seal of Certification" have been produced, tested and rated in accordance with standards established by the Air Conditioning and Refrigeration Institute. The program, developed by ARI in cooperation with the National Warm Air Heating and Air Conditioning Association, centers around the adoption of Btu-based ratings for cooling capacity, and applies to unitary equipment of 135,000 Btu's and under, excluding room air conditioners and heat pumps. Each manufacturer has signed a firm, enforceable contract under which the seal may be withdrawn if models tested at random by an independent laboratory do not conform to the established standard. A directory of participating manufacturers, and a detailed brochure explaining the program, are available from: Chief Engineer, Air Conditioning and Refrigeration Institute, 1346 Connecticut Ave., N.W., Washington 6, D. C.

more roundup on page 258

FOR THE NEW CHASE MANHATTAN BANK BUILDING

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NEW YORK CITY

CURTAIN WALLS

IN ALUMINUM

by

GENERAL BRONZE

Have you ever wondered why so many architects of large and important buildings - such as the new Chase Manhattan Bank Building pictured here - specify "curtain walls by General Bronze"? The answer is relatively simple. In a single word it's DEPENDABILITY. These architects have learned from experience that they can depend on GB for a 100% satisfactory job in every respect. No headaches, no worries ... no complaints ... no regrets.

GB's vast experience in curtain walls - aluminum, bronze or stainless steel-shows up in the designing, the engineering, the fabricating and in the erection. This all adds up to complete satisfaction for the architect, the general contractor and the owner.

To make sure your next curtain wall job will go easier, call in the General Bronze representative right at the start. He can help you save valuable time and money. Our catalogs are filed in Sweet's. For a file copy, address Dept. AR 593.

Chase Manhattan Bank Bldg., New York City Architects: Skidmore, Owings & Merrill Contractors: Turner Construction Co.



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The AIR FORCE provides WALKING SAFETY at Colorado Springs





Library Building. Marble treads with TRU-TREAD abrasive inserts made by Vermont Marble Co., Proctor, Vt. and installed by Carthage Marble Co., Carthage, Missouri.



Academic Complex. ALUNDUM Aggregate treads precast by Marus Marble and Tile Company, Greensboro, N. C. ALUNDUM terrazzo landings and floors installed monolithic.

. . . with ALUNDUM AGGREGATE in Terrazzo Stairs and Floors

Air Force cadets need protection on the ground as well as in the air — especially on stairways. They're like all young people — always in a hurry, always dashing — so stairway safety is vitally important. It's been provided by the architects of the new and outstanding U. S. Air Force Academy by the use of Norton ALUNDUM Aggregate — literally tons of it.

The many stairways in the Cadet Quarters Complex and in the Academic Complex have been made permanently non-slip by ALUNDUM Aggregate in the precast terrazzo treads — also in the monolithic platforms and landings. Water tracked in on stormy days will not lessen the non-slip effectiveness of ALUNDUM terrazzo. The hardness and toughness of the Norton aggregate also greatly increases the ability of the terrazzo to withstand the constant traffic of many feet.

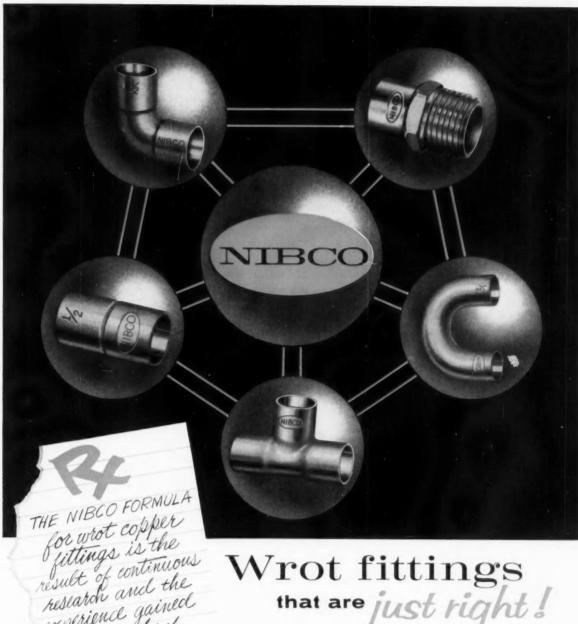
In the Library Building the marble treads of the beautiful spiral stairway have been made non-slip by twin strips at the nosing containing a Norton abrasive. These hard, tough strips also increase materially the durability of the treads.

*Skidmore, Owings & Merrill



NORTON COMPANY, WORCESTER 6, MASS.

ALUNDUM AGGREGATE for Terrozzo and Cement . ALUNDUM STAIR and FLOOR TILE . ALUNDUM and CRYSTOLON Sidewalk Abrasives



Wrot fittings that are just right!



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Whether you specify copper systems or install them, you'll appreciate the satisfaction of using wrot copper fittings you know are just right. Fittings by NIBCO are available from leading wholesalers throughout the nation.

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*American Standard ASA B16.22-1951

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Technical Roundup

Pros and Cons of Polysulfide Sealants Discussed at Forum

"Increasing use of shop-built components that are assembled in the field, the growing tendency toward shell construction with its variety of geometric forms, the introduction of new materials, and the increasing employment of combinations of materials-these are the four trends that will lead to increased reliance on sealants." So predicted Albert Dietz, Professor of Architecture, Massachusetts Institute of Technology, at a recent Building Industry Forum on polysulfide sealants, the first in a series to be sponsored by the Thiokol Chemical Corporation in key building areas.

Serving with Professor Dietz on the panel were Wayne F. Koppes, architect-consultant, who acted as moderator; Francis Frybergh, Specifications Chief, Skidmore, Owings & Merrill; W. S. Kinne, Jr., General Manager of Contracts, Architectural Metals, Kawneer Co.; George Grenadier, President, Grenadier Corp.; Robert McKinley, Pittsburgh Plate Glass; H. F. Johnson, Aluminum Company of America; and J. R. Panek, Thiokol Chemical Corp.

Although the panelists generally agreed with Professor Dietz' statements that there will be increased reliance on sealants and that the polysulfide compounds will "go the whole way" toward solving the joint problem if joints and seams are designed with their potentials and limitations in mind, they also pointed out some of the problems involved in their use. For example, Mr. Kinne, whose company specializes in fabricating standard and custom wall systems, reported that, while the polysulfide sealants have proved "exceptionally usable" in the shop, where production control is good, the difficulties of assuring equally good control of field applications have caused his company to be inclined to limit their use for field assembled joints.

Mr. Grenadier, on the other hand, not only contended that the sealants were relatively easy to handle, but invited members of the audience to prove it by trying their hand at sealing several typical window wall assemblies that were on display. And Mr. Panek added weight to this point of view with the good news that a one-part compound which will alleviate the problems of mixing and storing the polysulfide sealants is "just around the corner," and should be on the market this year.

continued on page 262

No.14 • Mars Outstanding Design Series



SQUARE WHEELS? Yes ... square wheels. Operating by means of a floating axle and cam gear, they take the bumps out of rough terrain and provide more traction. U.S. Patent No. 2786540 has been granted to designer Albert Sfredda of Bethlehem, Pa., for his invention.

The square shape gives superior traction in mud, sand, snow or uneven terrain. The flat surfaces of the wheels bridge the ruts instead of sinking into them as do round wheels. The wheels can be in any relative position, do not need to be synchronized—yet they run smoothly. Designed for use on heavy trucks, jeeps, farm or construction machinery, speeds up to 35 miles per hour can be attained.

This ingenious departure from age-old precedent is just one example of the contributions that today's designers are making. To help them translate their pace-setting ideas from concept to reality they require the best of drafting tools.

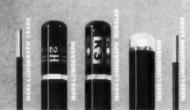
In pencils that means MARS, long the standard of professionals.



Among the famous imported Mars drafting products are: Left - 1001 Mars-Technico push-button lead holder. Above - 1904 Mars-Lumograph drawing leads, 18 degrees, EXB to 9H. Below -2886 Mars-Lumograph drawing pencils, 19 degrees, EXEXB to 9H; 2830 Mars-Lumograph Duralar-for drafting on Mylar®-base tracing film - 5 special degrees, K1 to K5: Mars-Lumochrom colored drawing pencils, 24 shades. Not shown Mars Pocket-Technico for field use; Mars pencil and lead sharpeners; Mars Non-Print pencils and leads.

Mars Products are available at better engineering and drafting material suppliers.

BIT M FOR GUPONT'S POLYESTER FILM



for the man who's going places...

the pencil that's as good as it looks

MARS

Sold at all good engineering and drawing material suppliers . J. S. STAEDTLER, INC. . Hackensack, N. J.

USE **Streamline** DWV FOR QUALITY LOW-COST



These two men are preparing a DWV prefabricated assembly for a multiple bath sanitary drainage system. With the variety of fittings available, the use of fittings especially designed for the job saves many joints in the fabrication. The strong, rigid assembly may be placed into position with a minimum number of connections needed to complete the installation. Contractors report DWV copper tube and fittings can be installed in half the time normally required when using cumbersome caulked or threaded piping materials.

IN ADDITION TO A COMPLETE LINE OF DWV TUBE AND FITTINGS, the Mueller Brass Co. also manufactures a wide range of solder-type wrot fittings, cast valves, and K, L and M tube for every piping need . . . always available from better wholesalers everywhere.



COPPER TUBE AND FITTINGS SANITARY DRAINAGE

Lifetime copper is recognized as the ideal material for modern piping . . . that's why Streamline DWV copper tube and fittings for sanitary drainage has gained widespread acceptance by architects, building and plumbing contractors everywhere.



Here are just a few of the many ways that DWV tube and fittings can make a better installation at a

DWV copper tube and fittings are easy to handle and are far lighter than competitive rustable materials. Lengths up to 20 feet can be easily handled by one man. Fewer joints are needed and every step of installation is quicker, easier, allows more work per man-hour. P DWV copper tube and fittings are corrosion resistant . . . cannot rust. P DWV copper tube and fitting joints never leak ... always form permanently water-tight and gas-tight connections. P DWV copper tube and fittings have smooth interiors with no internal projections or threads to trap particles and clog the system. DWV copper tube and fittings take up less space. 3" stack fits in 2" x 4" wall partition with no furring or buildouts. DWV is also ideal for remodelling. PDWV copper tube and fittings can be prefabricated in the shop or on the job to cut time and costs to a minimum. PDWV copper tube and fittings in a drainage system improve the quality of any home or building. Everybody accepts copper as the symbol of permanence and dependability.

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8 , PORT HURON MICHIGAN

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Additional information in Sweet's Architectural File 17c/Re, Sweet's Light Construction File 6c/Re or write:



FRED REUTEN INC.

Technical Roundup

Since the overall tenor of the meeting seemed to be that the polysulfide compounds are as effective as any sealant now available—if they are properly specified and applied—perhaps Mr. Frybergh's remarks shed the most real light on the subject. He pointed out early in the meeting that, from the architect's point of view, the most pressing problems with sealants are: unavailability of adequate literature, absence of specifications and standards, inadequate technical assistance, and a lack of trained "sealing specialists."



Prototype Hot-Cold-Light Panel

A full-scale wall panel that combines thermoelectric heating and cooling with electroluminescent lighting previews the functional-decorative tools which tomorrow's designer may expect to have at his disposal.

The light source is a thin layer of phosphor sandwiched between the two "panes" of glass that make up the electroluminescent screen. When excited by an alternating current, the phosphor gives off a soft, even light which may be varied in intensity and color to produce changing "moods" within a room. In the prototype hot-cold-light panel, patterns or "mobiles" of anodized aluminum are mounted in front of the light producing screen. The visible part of the thermoelectric assembly, these mobiles heat or cool the room air. The rest of the assembly is concealed behind the glowing panel. Since the heating or cooling effect is produced directly from the flow of an electric current through special solid materials, there are no moving parts. Controls consist of four dials: one to change color combinations; one to vary light intensity; one to select either heating or cooling; and a thermostat for automatic temperature control.

The panel was developed by Westinghouse Electric Corporation, with Peter Muller-Monk Associates as consultants on the design.

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FIAT Toilet Compartments stand out on any job because they're built to stand up to all the punishment and wear they'll face in any installation—even the tough ones; schools, commercial buildings, institutional buildings. That's the test of FIAT's sturdy construction—yet only a small part of the complete FIAT story. For they look good, install faster, last longer. Exclusive rustproof aluminum hardware and fittings, and wear-proof Nylon hinges make FIAT compartments virtually maintenance-free. Fittings are individually packaged, layouts simple, installation fast! Write today for free catalog showing the whole line.

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Made in 48" and 96" lengths for the following lamps:

Rapid Start Slimline 800 ma R. S. Power Groove VHO and SHO

All fixtures, except the 40 w. Rapid Start, are interchangeable on the Uni-Race with all other fixtures of the same length.

4 SIMPLE STEPS

THAT SAVE OVER 75% IN INSTALLATION TIME

Contractors report that all labor, including rods or stems and lamping, for a Gibson Ortho installation averages only 17 to 22 man-minutes per fixture, as compared with the NECA standard of over 2 man-hours for conventional fixtures.

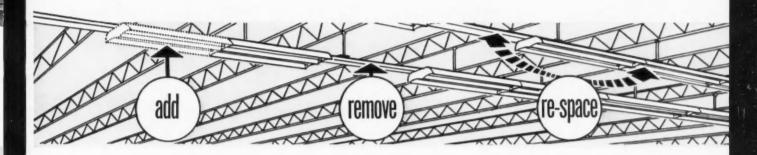


Assemble the Uni-Race • The exclusive Gibson Raceway known as the Uni-Race can be assembled on the floor in lengths up to 48 feet. The four or eight-foot sections are joined by telescoping couplers which provide a smooth, rigid union of the sections and are fastened with self-tapping screws.

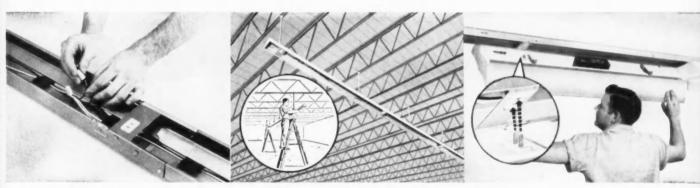
WRITE FOR COMPLETE INFORMATION ABOUT THE GIBSON ORTHO LINE



Add, remove, re-space fixtures any time without tools or rewiring



The unique design of the Gibson Ortho, with its exclusive Uni-Race, makes it the world's most versatile fixture. Instead of being wired permanently to the branch circuit, it simply plugs in—like an appliance. A plug built into the fixture engages a receptacle in the Uni-Race, and since the receptacles are positioned at 48" or 96" fixture intervals along the Uni-Race, spacing of the fixtures is automatic. They can be mounted in continuous rows or spaced at intervals of 4, 8, 12 or more feet. Fixtures can be added or removed any time, according to the requirements of plant layout. Such changes need no electrical work whatever. They can be made by one man without tools. Think what this saves the owner whenever the lighting layout has to be re-arranged or when a fixture must be removed for repairs or cleaning!



2 Wire the Uni-Race • Branch-circuit wires are laid in the Uni-Race and connection is made at each built-in receptacle. The receptacles will later receive the plug that is built into each fixture. The Uni-Race is U.L. approved as a raceway with a capacity of five No. 3 AWG wires or eleven No. 14 wires.

3 Hang the Uni-Race • The rigid Uni-Race is easily lifted and hung in any of several different ways. Lengths up to 48' can be hung as a unit if supported every 24' while being raised to mounting position. When the branch-circuit connection is made, the Uni-Race is ready for the fixtures.

4 "Plug In" the Fixtures • The fixtures are merely "plugged in" on the Uni-Race. Hooks on the fixture engage in slots on one side of the Uni-Race, acting as hinges. The fixture is swung closed and latched. The built-in plug on the fixture automatically connects with the receptacle in the Uni-Race.

GIBSON MANUFACTURING COMPANY

1919 PIEDMONT CIRCLE, N.E.

ATLANTA 9, GEORGIA

Manufactured in Canada under franchise by Electrolier Manufacturing Co., Ltd., Montreal

When wear creates problems... MET-L-WOOD® puts beauty to stay!



COUNTERS of Met-L-Wood can be designed to fit any decorating scheme, yet stand hardest service.



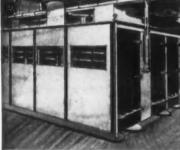
CURTAIN WALLS made of Met-L-Wood panels permit fast construction; lend beauty and life to buildings.



MOTOR STAIRWAY and WALKWAY PANELS of Met-L-Wood stand up under constant use... help damp vibration, resist denting.



WAINSCOTING in traffic areas gets rough treatment; is a natural for decerative Met-L-Wood use: sustained beauty without upkeep.



CABINETS and enclosures of all kinds gain strength, beauty, life from Met-L-Wood.



X-RAY & RADIATION ROOMS can be attractive as well as safe with lead-cored Met-L-Wood panels, doors.

Detailed data on how Met-L-Wood can serve you, in one or more of its many forms, is yours for the asking. Write for new Bulletin 522.

Met-L-Wood Corporation, 6755 West 65th Street, Chicago 38, Illinois.

STRONG DURABLE LIGHTWEIGHT

MET-L-WOOD

Metal bonded to plywood

Product Reports

continued from page 235



Color System for Ceramic Tile

The "Harmonitone Palette," a new system of categorizing tile colors, is expected to greatly simplify the selection of coordinated colors in ceramic tile. Each color family is called simply by its right name-blue, yellow, green, etc.-and includes within it all the shades of that color in all the available glazes and textures. Each of the 139 Harmonitone colors harmonizes with others in the same family, and is compatible with colors from other families in the system. In addition, a simplified numbering system clearly identifies each tile by color family, color value and texture. Mosaic Tile Co., Zanesville, Ohio



Low Cost Welding Fittings

A new line of welding fittings is said to make it possible for plumbing contractors to install welded pipe connections at a price competitive with threaded systems now on the market. The line includes tees, elbows and concentric reducers designed for normal (150 lb.) installations and cold formed to match perfectly with the pipes they connect. Their roughing in dimensions are the same size as the nominal size of the fitting. According to the manufacturer, the Husky fittings are actually stronger than the pipe they join: in a test set-up, the pipe fractured at 7750 psi internal pressure, leaving the fitting and the welded joint intact. Nibco Inc., 500 Simpson St., Elkhart, Ind.

more products on page 270



McDonough District Hospital in Macomb, Illinois has Adlake curtain wall and reversible windows.

Architects: Lankton-Ziegele-Terry and Associates, Peoria, Illinois.

General Contractor: S. Patti Construction Company, Kansas City, Missouri.



EX 322= A+

Last year, Adlake engineers took part in planning fenestration for 322 buildings...

multiplied experience that earns Adlake an A+

rating with leading architects. Next time plans call for curtain wall, double hung, pivot or stationary aluminum sash, let Adlake specialists share their years* of experience with you. Write

The Adams & Westlake Company, Elkhart, Indiana.

*Adlake is one of the oldest and largest manufacturers of non-residential aluminum windows



Catalog on request or see Sweet's.

In Colorado's largest private general hospital

ST. MARY-CORWIN HOSPITAL

PUEBLO, COLORADO

Architects: MONROE, IRWIN & DUNHAM, Denver, Colo.
Mechanical Engineers: MARSHALL & JOHNSON
Mechanical Contractor: NATKIN & COMPANY
General Contractor: ROBERT E. McKEE

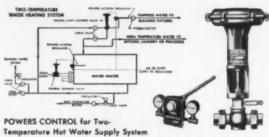
11111



Above: Recovery room for efficient post operative care



For more than 75 years the Sisters of Charity have been caring for the sick in Pueblo's St. Mary Hospital. Now its new imposing structure the St. Mary-Corwin Hospital contains modern facilities unsurpassed for diagnosis and treatment of disease, patient care and comfort. Powers Temperature Control here helps increase hospital efficiency.



here prevents wasted fuel and danger of overheated water.







THERMAL COMFORT throughout is provided by **POWERS** Temperature Control for each individual room and various types of baths

Proper Thermal Environment is important in this 450 bed hospital. Patients, nurses, doctors and staff benefit from Powers air conditioning control in the surgical suite consisting of 8 major and 3 minor operating rooms, recovery and delivery rooms, X-Ray department, laboratory, maternity department and pediatric unit. Temperature in other spaces is also regulated by Powers individual room control system.

Greater Simplicity and year after year dependability of a Powers Pneumatic Control-System provides these money saving benefits —

Lower Heating Costs — Powers accurate control prevents discomfort of over-heating and reduces fuel losses.

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Powers Complete Responsibility — for a correctly engineered control system, proper installation, continuous successful operation and prompt SERVICE, when required, from offices in 85 cities.



732 Powers Pneumatic Thermostats maintain set temperatures constantly. They need no daily checking or readjusting. Patients, nurses, doctors, staff and visitors all benefit from the THERMAL COMFORT they provide throughout the hospital.





PATIENT'S SAFETY and COMFORT In Hydrotherapy, showers, and infant baths are assured by Powers HYDROGUARD thermostatic water mixers. They are also used for X-Ray film developing, surgeon's wash-up sinks, artificial kidneys, blood coolers in heart surgery and many other applications, DIGWEST WITH BUTSHES AND IN

NO MORE Valve Packing Maintenance or Water Leakage with Powers PACKLESS Valves.



864 Powers PACKLESS Control Valves are used here on convectors, and unit ventilators. They're labor savers, and cut the cost of maintenance.

Are You Planning a New Hospital? No other single firm makes so many of the essential thermal comfort controls for modern hospitals as POWERS. Only a few are shown above. Ask your architect or engineer to include a Powers Quality System of Thermal Comfort Control—throughout the building for heating, air conditioning, various baths and hot water heaters.

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Powers makes the most complete line of water temperature control

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65 YEARS OF AUTOMATIC TEMPERATURE AND HUMIDITY CONTROL





Circular Fixture in Square Frame Although the face appearance of a new series of Neo-Ray recessed fixtures is circular, the housing itself is square to accommodate four, six

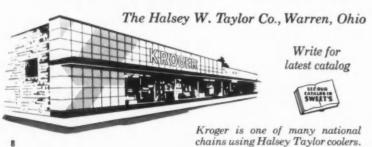
or eight fluorescent lamps. The frame-within-a-frame construction of the face assembly leaves no fasteners or screws exposed, and the hinged inner frame and concave Plexiglas diffuser mount securely by means of an exclusive "Twist-Lock" feature. The round fluorescents come in 24, 36 and 48 in. diameters. Neo-Ray Products, Inc., 315 East 22 St., New York 10, N. Y.

More Powerful Fluorescent Lamp An improved version of G.E.'s Power-Groove lamp is said to produce 15 per cent more light with only 7 per cent more power consumption. The grooves in *Power-Groove* lamps serve to place part of the inside phosphor coating closer to the arc stream where it can be stimulated into greater light production. The new design uses forty 3 in. crescent-shaped grooves alternately on opposite sides of a 96 in. tube; the earlier model has a series of nine 9 in. Ushaped grooves along one side only. In the new lamps, the grooves force the arc stream in an 8 ft tube to travel an extra foot—a distance



Halsey Taylor builds good will for chain stores and shops

Supermarkets and retail shops in the new suburban shopping centers find Halsey Taylor combination low and high level coolers bring the customer back. Children can drink from this modern cooler without any attention from mother or store personnel . . . and mother can step on the pedal without shifting bundles.





equal to the arc in a 9 ft lamp. In addition, the redesigned tube configuration made it possible to reduce the weight of the lamp by nearly one quarter. The improved Power-Groove will be available in 8 ft lengths by early spring, with 4 and 6 ft lengths to follow. Large Lamp Dept., General Electric, Nela Park, Cleveland 12, Ohio



Glass Lever-Handle

Appropriately enough, the new New York City office building for Corning Glass Works will have locks equipped with glass lever-handles. The free-blown, teardrop handle of *Pyrex* boro-silicate glass was developed by the Yale & Towne Research Center in collaboration with Corning's Engineering Division and architects Harrison, Abramovitz & Abbe. It is used with specially adapted heavyduty mortise locksets. Yale & Towne Mfg. Co., Chrysler Bldg., New York 17, N. Y.

more products on page 274

When it must meet the test of time...

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Over 100 years of standing the test of time! . . . Ruggedly made of wrought steel to give long use . . . skillfully finished to take all kinds of weather.

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"WHAT DO YOU MEAN...



. A LEAK IN MY ROOF?"

Yes, this owner's new roof does have a leak — A HEAT LEAK. And, it can't be fixed. It was designed into the roof, quite unintentionally, by a specification allowing thermal conductance in excess of a 0.24 U.

How costly is such a leak? In terms of return on investment, the architect's greatest contribution to the structure could have been right here — in its thermal design. For example, a 0.12 U roof specification (instead of 0.24) could have offered these savings for a 200,000 sq. ft. structure in a 7000 degree-day zone:

- 1 A savings of from \$10,000 to \$20,000 on original investment in heating systems and equipment.
- 2 Per-season fuel savings, depending on fuel used, of 4,650 for oil (@ $11.4 \epsilon/Gal.$), 4,530 for natural gas (@ $8.4 \epsilon/Therm$), or 2,940 for coal (@11.85/Ton).
- 4 A reduction of \$462 per season in cooling costs for electrical energy and maintenance of equipment.

And these direct savings are in addition to the benefits of better condensation control, and increased comfort for the occupants.

The difference in cost between minimum roof insulation, and an adequate, 0.12 U thermal design is small — so small that it becomes the most profitable investment that can be made in a structure.

And because heating and cooling costs are a continuing expense it is necessary to choose a roof insulation that will provide these dramatic savings year after year. Fesco Board will provide this permanence. Formulated with all-mineral perlite, Fesco is incombustible, moisture resistant, super-efficient, and rot-, mildew-, and fungus-proof. Write us for new technical data on thermal design.





SPECIFY INCOMBUSTIBLE

FESCO INSULATION BOARD

Calculations based on 200,000 square foot industrial building in 7000 degree-day zone, using temperature differential of 75° for heating and 15° for cooling. Reference: 1958 ASH\$VE GUIDE.

F. E. SCHUNDLER & COMPANY, INC. 504 RAILROAD ST., JOLIET, ILL.

Eastern Office: Chatham Phenix Bldg., 29-28 41st Ave., Long Island City, N.Y.

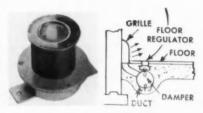
RATED FIREPROOF MATERIALS-ACOUSTICAL & INSULATING
Developers and producers of incombustible mineral products including Ebbtone Acoustical Tile, Fesco Insulation Board, Coralux Acoustical Plaster, Coralux Perlite Aggregates, Mica Pellet Vermiculite, High Temperature Insulating Blocks and Insulating Cement.



Product Reports



Carved Wood Panels, Viking Style Speaking of architectural revivals, the Seneco Company of Nyköping, Sweden, is now marketing in this country a series of wood panels patterned in a style that dates back to the days of the Vikings. The various low-relief patterns in the series are "carved" into the Swedish pine (fir to us) by a sandblasting technique that produces an appropriately rough-hewn appearance. For interior use, the wood is given no further treatment; for exterior use, it is treated with a preservative and painted or stained. The finished panels, which measure 7 in. wide by 7 ft 3 in. high, are often combined into doors as shown, but may also be used as frames, moldings, paneling, room dividers, ad infinitum. Manufacturer's U.S. representative: Stig Hagstrom, Lake Hill, N. Y.



Damper Regulator for Branch Ducts By making possible the use of branch ducts and inexpensive grilles instead of registers, the new No. 330 concealed damper regulator cuts installation costs for perimeter heating and air conditioning. Installed in the floor in a branch duct near the grille, the regulator accurately controls the volume of air in the branch. Its adjustable cover can be screwed down flush with the floor after the concrete is set and the form is removed. Young Regulator Co., 20910 Miles Ave., Cleveland 28, Ohio

more products on page 280



You can bank on Ranch Plank

This popular-priced version of famous random Oak plank flooring always pays off! Bruce Ranch Plank Floor has unusual buy-appeal with its factory-inserted walnut pegs . . . alternating strips of 24'' and 34'' widths . . . and mellow, medium-dark finish. The finish is factory-applied for beauty, durability and economy of installation (no sanding and finishing on the job). Ranch Plank is easy to lay; nail it just like strip flooring. Write for color booklet. See our catalog in Sweet's Files.

E. L. BRUCE CO. Memphis 1, Tennessee

Bruce Ranch Plank Hardwood Floors

Naturally Beautiful

Photo by Hedrich-Blessing

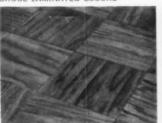
BRUCE UNIT-WOOD BLOCKS



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STRUCTURAL STEEL by INGALLS

Jacksonville's new City Hall will soon join the Prudential Building in Jacksonville as another imposing addition to the progressive Florida skyline, Like the Prudential Building, structural steel for the City Hall will be fabricated and erected by Ingalls.

When you call on Ingalls for fabricated structural steel...as do so many leading companies throughout the United States... you get not only the advantages of a strong economical framing material, but also the extra benefits of Ingalls' fabricating "know how" through 49 years of experience.



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- · There is no substitute for genuine Clay Facing Tile.
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Now! the greatest advancement in locking protection since the bolt replaced the boulder

The new *MS* 1851-II TWO-WAY LOCK for pairs of SWINGING GLASS DOORS ... gives double protection and exit safety!

The MS® 1851-II Two-Way Lock is specifically designed for the control of *Main and Obvious* entrance pairs of doors for places of public assemblage. One 360° turn of the key throws or retracts both a *lock* and *threshold bolt*, simultaneously locking or unlocking both doors. This insures that the *entire opening* is usable during business hours and places the responsibility of traffic control on management. The key can be removed only in the locked or unlocked position. Holding special interest for insurance companies and organizations whose professional concern is public safety, this purposefully designed deadlock adds strength to the narrow stile installation and assures exit freedom.



More than a slogan, **MAXIMUM SECURITY.** is the exclusive basic principle that governs the design and manufacture of Adams-Rite locking devices that are, in fact, stronger than the doors and windows in which they are installed, providing the ultimate in security and safety.

An outstanding example of this principle in action is the new MS® 1851-II. Unique in deadlock design and construction, the MS® 1851-II operates unlike standard boths that vacate the lock when projected. The MS® counterbalanced bolt retains as much bolt within the lock stile as projected. Actually bridges the opening with a solid bar of steel (from as short a backset as 7½"), making it impossible to force entry without destroying the door channel itself. This, coupled with the joint action of the 4015 two-way converter threshold bolt, and the lifetime strength of dichromate zinc plated steel construction, maintains Maximum Security. The MS® 1851-II which eliminates locking hardware in the inactive door is a combination of the basic MS® 1851 Lock and No. 4015 Two-Way Converter. The 4015 may be stocked separately to convert any MS® 1851 series lock into an MS® 1851-II.

Quality Hardware for Over Half a Century

For additional detailed information and specifications, write

ADAMS-RITE

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Adams-Rite also produces over 90% of all door hardware for the airframe industry,





YOU SPECIFY MEET THESE 10 BASIC REQUIREMENTS?

- 1. Rugged hard to damage
- 2. Clean-cut, snug-fitting edges
- 3. Smooth, solid base for felts
- No worry about punctures or depressions that become weak spots under felt
- 5. Withstands heavy traffic
- 6. Strong, rigid, crush-resistant
- 7. Uniform density and thickness
- 8. Permanent, efficient insulation
- 9. Over 30 years job-proved service
- 10. Billions of feet in use

IT WILL IF YOU SPECIFY JOB-PROVED CELOTEX BRAND ROOF INSULATION BOARD

You get the "BASIC 10" requirements when you specify the CELOTEX brand . . . assurance of job-proved performance . . . <u>and then some!</u> You <u>know</u> what to expect of Celotex Roof Insulation . . . not how it <u>SHOULD</u>, but how it <u>DOES</u> perform. That's what we mean when we say Celotex is "PERFORMANCE-PREDICTABLE!"

AVAILABLE IN 3 TYPES

PRESEAL

Dependable "REGULAR" . . . asphalt-coated "PRESEAL" . . . and exclusive "CHANNEL-SEAL" . . . all 3 in a variety of thicknesses.

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ROOF INSULATION

See 1959 Sweet's Architectural File, Catalog 10a Ce. Write for specifications, Samples, Information Manual

THE CELOTEX CORPORATION, 120 SOUTH LA SALLE STREET, CHICAGO 3, ILLINOIS



Rigid Built Up Roof Insulation

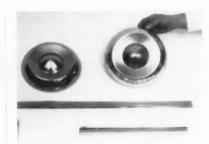
Roofmate, a new insulation designed especially for use under built up roofs, consists of expanded polystyrene board wrapped in laminated kraft paper. Because it is waterproof, its insulating efficiency (a U value of .22 for one inch thickness, .13 for 2 in.) does not deteriorate with age. In most cases, an additional vapor barrier is not needed. The boards, each 2 by 4 ft, come in thicknesses of 1, 1½, 1½, and 2 inches. Their light weight is said to make

laying easier and lighten roof loads, while their high compressive strength provides a firm base for roofing materials and good resistance to wear and tear during construction. The material can be cut with a pocket knife, and applied with conventional roofing techniques. The Dow Chemical Co., Midland, Mich.



Heavy Duty Outdoor Luminaire

A new luminaire designed for use with 400 watt mercury vapor or 500 watt incandescent lamps controls light via a one-piece prismatic refractor made of thermal shock-resisting glass. The glass member is supported by a stainless steel spring hinge, and pressure latches hold the refractor assembly tight against the gasketed hood, protecting its interior against weather and dirt. The unit, which measures 16½ in. in diameter and 15½ in. in depth, can be installed on a cast aluminum bracket or a standard pole bracket arm. Holophane Co., Inc., 342 Madison Ave., New York 17, N. Y.



Frosted Stainless Steel

A new finish called Fro-Zon is being applied to stainless steel to give the shiny metal a frosted look. Produced by a "semi-blasting" technique that forms tiny light-diffusing mounds on the metal surface, the finish does not actually penetrate the surface and has no effect on the physical properties of the steel. It can be applied to stainless steel of any size, shape, type or gauge, but has thus far been used primarily on the Type 430 stainless used for automobile trim. Stamping Service, Inc., Detroit, Mich.

more products on page 286



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Both abbreviated and detailed specifications are contained in Troy's new and up-to-date LAUNDRY EQUIPMENT SPECIFICATIONS FOR ARCHITECTS. 60 pages covering Troy's complete line of power laundry equipment . . . washers, extractors, ironers, tumblers, compressors, presses . . . to name but a few.

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Pittsburgh Corning Products make the things you build cost less, last longer, look better

example:



NEW 13/4" FOAMGLAS® Roof Insulation: unique benefits for more roofs at lower cost.

If you've ever compared the quality of roof insulations, you'll recognize FOAMGLAS, the cellular glass insulation, in this picture. And you'll know that it's the one material that combines all these benefits: moisture-proof for constant insulating value . . . a natural vapor barrier . . . incombustible . . . and strong enough for every roof and traffic load.

What you may not recognize is the new 1¾" thickness of the FOAMGLAS roof insulation pictured. Now Pittsburgh Corning makes it possible to put the quality of FOAMGLAS on roofs needing less than 2" insulation. And new 1¾" FOAMGLAS Roof Insulation costs less. 25% less. Now FOAMGLAS, which requires no vapor barrier, is competitive with other roof insulations on an installed basis.



example:

PC GLASS BLOCKS: artful blend of color, form and function matched to the curtain wall concept. A glance at these varied designs will show you how Pittsburgh Corning has transformed glass blocks into a versatile new medium of curtain wall design.

Consider color. PC developed 12 brilliant ceramic face hues to create sparkling color accents for glass block curtain walls.

And form. There's a new size and shape to PC Glass Blocks . . . the 4 x 12. Blended with standard square blocks, the 4 x 12—plain or colored—presents broad possibilities for form and pattern variation on the face of a curtain wall.

Texture, too. PC Glass Blocks provide a full range of surface patterns and textures to enhance design.

Add all this to reasonable initial cost, single trade installation and low maintenance, low surface condensation and good insulation value, privacy and protection with a better use of daylight. The sum total is a new range of curtain wall designs . . . flowing from the color, form and function blended in a growing line of PC Glass Blocks.

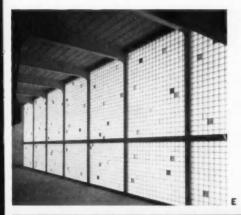
- A John J. Kane Memorial Hospital, Pittsburgh, Pa. Architects: Mitchell & Ritchey—Button & McLean, Pittsburgh
- B City College of New York Library, New York City, New York Architects: Lorimer & Rose, New York
- C-New York School of Printing, New York City, New York Architects: Kelly & Gruzen, New York City
- D—Cromby Station of Philadelphia Electric Company, Philadelphia, Pa. Engineering and Design. Philadelphia Electric Company Consulting Architects: Harbeson, Hough, Livingston & Larson, Philadelphia
- €—Sacred Heart Seminary, Delaware, Ontario Architects: Blackwell & Hagarty, London, Ontario
- F—Development Workshop Building, Corning Glass Works, Corning, New York Architects: Harrison & Abramovitz, New York
- G Highland Park High School, Highland Park, Illinois Architects Loebl, Schlossman & Bennett, Chicago

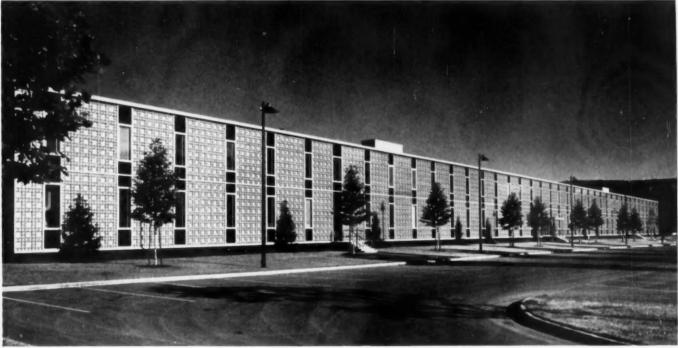


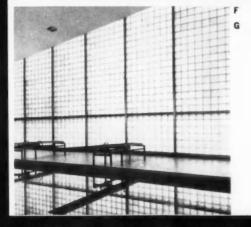












C

example:

NEW FOAMGLAS* STAY-DRY PIPE INSULATION: long life, high performance, low cost for heating-cooling lines. Pictured here is a way you can avoid sacrificing insulation quality for cost on heating-cooling lines from +35°F to +350°F. It's Pittsburgh Corning's new FOAMGLAS STAY-DRY Pipe Insulation . . . at a cost comparable with other insulations used for commercial lines.

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A new plastic coated steel combines

the decorative value of vinyl in custom colors and textures with the strength and workability of steel. According to U.S. Steel, tests indicate that the material can be fabricated in much the same way as cold rolled sheet without damaging the coating or effecting a color change. Production of the coated steel involves curing and bonding of liquid vinyl plastisols to sheet steel in a continuous coating process. The coating can be specified in thicknesses ranging from .008 to .020 in., in increments of .001 in. It can be em-

bossed with any texture that can be engraved on a printing roll, and produced in any specified color with assurance of color uniformity. Several standard textures are available, but colors will be provided on a wholly custom basis. Sheets are available in 18 through 28 gages and widths from 24 to 52 in. Lengths can run 30 to 144 in. U. S. Steel Corp., 525 William Penn Place, Pittsburgh 30, Pa.



Textured, Patternless Wallpaper

A new collection of handmade wall-coverings designed for commercial installations features a rich raised-surface texture and a wide range of unusual colors. Because the design surface, with its raised "dots" and tone-within-tone color combinations, is sealed onto the parchment ground with transparent vinyl, the papers in the "Architectural Collection" are fully washable. They come in standard-size rolls and can be hung like conventional wallpaper. Winfield Design Associates, San Francisco, Calif.



Altar Appointments in Aluminum

A line of altar appointments designed by Rambusch Studios for the Aluminum Company of America's "Forecast" collection of outstanding designs in aluminum will be available on the market during 1959. Fabricated from Kensington metal, a special luxury-finish aluminum alloy, the Altar Group will be produced and sold through Wearever Aluminum, Inc., New Kensington, Pa.



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lishes a revolutionary, efficient drip cap. With the Beveled Siding Clip, there are no exposed nails.

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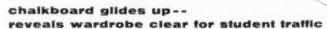
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*Comfort chart



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Over 14 acres (650,000 square feet) of floor space under one roof.

Twenty-three roof-mounted air-handling units furnish outdoor and/or recirculated filtered air as required. Provision has been made for future addition of cooling coils.

Air for heating and ventilating of manufacturing areas is distributed by Venturi-Flo industrial diffusers.

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Model JS Venturi-Flo diffusers in

Model BP Venturi-Flo diffusers in

conditions at

new National Lock plant...

provided by Barber-Colman automatic controls and air distribution components working together in a "combination system"

Electrionic Automatic Controls

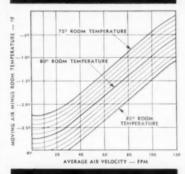
In big plants like National Lock, Barber-Colman Electrionic control systems offer features of particular interest to architects and owners.

Barber-Colman Electrionic systems provide quick response to changes in heating or cooling requirements. Uniform indoor temperatures are maintained.

On many large jobs involving multiple systems, major savings in initial cost are afforded by Barber-Colman Electrionic Control. Operating and maintenance costs are low because of the high reliability of Barber-Colman components and the relatively simple maintenance procedures. Electronic sensing elements have no moving parts . . other control modules are designed to insure dependable operation with infrequent maintenance.

hance. Barber-Colman Electrionic Control is the modern control for modern plants. See our catalog $\frac{30i}{Ba}$ in Sweet's Architectural File.

* COMFORT CHART



Comfort Standards

Here are the conditions of air movement and temperature in the occupancy zone that are required for human comfort. Points above the line fulfill human comfort standards.

Uni-Flo Engineered

Barber-Colman Uni-Flo products assure you engineered air distribution that eliminates complaints of drafts and discomforts.

Streaking and smudging are practically eliminated. Complete diffusion, plus correct direction of air flow, prevents dirt-depositing impingement on ceilings and walls. Grille frames can be sealed in because the cores are removable for cleaning. This prevents streaking due to air leakage.

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A complete line is available in a variety of styles and finishes to meet any architectural requirement.

See our catalog $\frac{29f}{Ba}$ in Sweet's Architectural File.

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With a Barber-Colman "combination system," comfort chart conditions are guaranteed because: Correct correlation between air movement and room temperature is established through accurate electrionic temperature control and engineered air distribution — and because Barber-Colman assumes the undivided responsibility for complete system performance. Call your nearby Barber-Colman automatic control and air distribution office for descriptive literature, or write us.

















Write today for your copy of Bulletin F8987 outlining the newest ventilating and air conditioning trends in modern industrial plant design.

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Dept. O. 1604 Rock Street, Rockford, Illinois



Architects & Engineers: L. J. Hosman and R. F. Hastings, Detroit. Consultants: Smith, Hinchman and Grylls, Inc., Detroit. General Contractor: J. H. Pomeroy & Co., Inc., San Francisco. Is Angeles. Mechanical Contractor: J. B. Nettles & Co., Inc., San Francisco. Sprinkler Contractor: Rushlight Automatic Sprinkler Co., Portland. Pipe Jobbers: Grinnell Co. of the Pacific, Los Angeles. Keenan Pipe & Supply Co., Los Angeles.

Under this 23-acre roof . . . 1,053 tons of Bethlehem Steel Pipe



Our buttweld pipe is made on modern continuous-weld mills. Each length of pipe is hydrostatically tested to assure quality.

Recently completed in East Los Angeles, here's one of the largest and most modern automobile assembly plants ever built by the Ford Motor Company. Designed for a two-shift production day—and with an eye to economy—the plant is serviced by hundreds of miles of Bethlehem steel pipe.

Experience had shown the designers that steel pipe gives the most service for the least expense. So they specified steel pipe in diameters from ¼ to 12 in. for the plumbing, heating and gas lines, for the compressed air piping, and for the automatic sprinkler system.

When you next have a piping job, you'll come out ahead if you use Bethlehem steel pipe. Beth-Co-Weld continuous buttweld pipe (up to 4 in. nominal) and Bethlehem electric resistance-weld pipe (from 5-9/16 to 16 in. OD) will help you make a profit—and will give your customer what he wants.

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On the Pacific Coast Bethlehem Products are sold by Bethlehem Pacific Coast Steel Corporation Export Distributor: Bethlehem Steel Export Corp.







From pit to plant, LeTourneau-Westinghouse moves with coal Earthmoving equipment manufacturer estimates steam generated from coal costs only half as much as from competitive fuels

At LeTourneau-Westinghouse Co., Peoria, Ill., steam is used to heat an area that has swelled to a million square feet of space. But obsolete heating facilities proved inadequate for this demand. When engineering studies recommended a new heating plant, fuel surveys indicated that the firm should continue to use coal for availability and economy. Estimates proved that steam produced from burning coal in this area costs about half as much as from competitive fuels. Today fuel costs at this modern installation are at a minimum. Automatic, efficient operation has lowered coal and ash handling costs. And manpower requirements have been reduced from 12 to 7 men.

Consult an engineering firm

If you are remodeling or building new heating or power facilities, it will pay you to consult a qualified engineering firm. Such concerns—familiar with the latest in fuel costs and equipment—can effect great savings for you in the efficiency and economy of coal.

Coal is lowest cost fuel

Today, when the annual cost of fuel often equals the original cost of the boilers, you should know that bituminous coal is the lowest cost fuel in most industrial areas. And modern coal-burning equipment gives you 15% to 50%

more steam per dollar, while automatic operation trims labor costs and eliminates smoke problems. What's more, tremendous coal reserves and mechanized mining procedures assure you a constantly plentiful supply of coal at stable prices.

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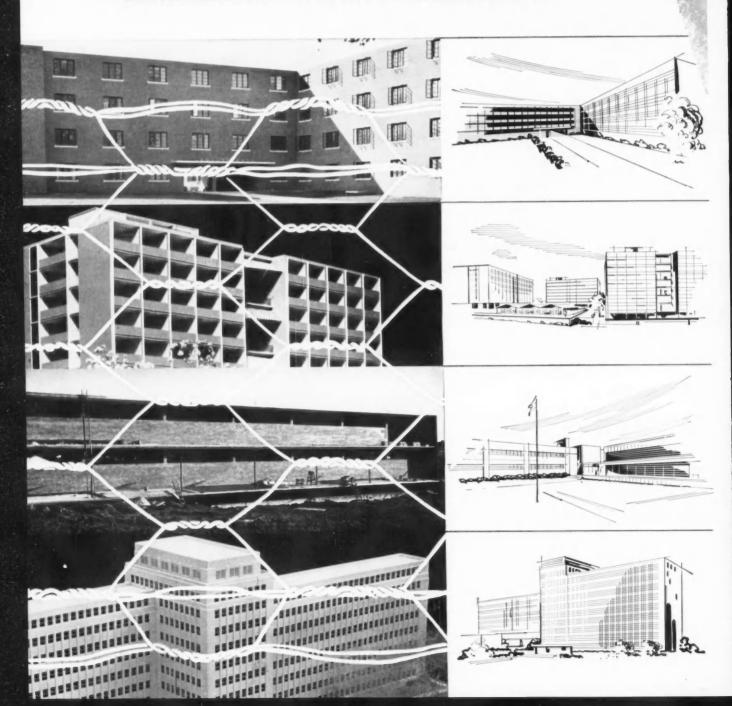
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GALVANIZED MASONRY REINFORCEMENT



goes to college

Towa

lowa State College: Keywall masonry reinforcement approved for Helser Hall, a new men's dormitory at Iowa State College, Ames, Iowa. Architect: Brooks-Borg, Des Moines, Iowa; General Contractor: W. A. Klinger Construction Co., Sioux City, Iowa.

Missouri

University of Missouri: Three 9-story residence halls and a single cafeteria unit for women students being constructed at the University of Missouri, Columbia, Missouri. Keywall is being used in this vast project. Architect: Hellmuth, Obata and Kassabaum, St. Louis, Missouri. General Contractor: D. C. Bass & Sons, Enid, Oklahoma.

Kansas

University of Wichita: Keywall used in masonry curtain walls in the new Mathematics and Physics Building at the University of Wichita, Wichita, Kansas. Architect: W. I. Fisher & Company, Wichita, Kansas. General Contractor: Hahner & Foreman Inc., Wichita, Kan.

Indiana

Indiana University: The Elisha Ballantine Hall, a basic course classroom building at Indiana University, Bloomington, Indiana. Masonry walls are being reinforced with Keywall. Architect: A. M. Strauss Inc., Fort Wayne, Indiana. General Contractor: Huber, Hunt and Nichols Inc., Indianapolis, Indiana.

Campus buildings are getting greater reinforcement at lower cost

Architects accept Keywall masonry joint reinforcement for building projects at colleges and universities. Look at these new classroom buildings and residence halls at four leading universities. Masonry joints on these buildings are being reinforced with Keywall for added strength, greater crack resistance.

The ability of Keywall to increase lateral strength and reduce shrinkage cracks in masonry has been demonstrated on job after job. Recent tests confirm this superior quality. Architects know they're getting effective reinforcement at a savings.

Masons like Keywall...they use it as specified. They find it easy to handle and easy to adapt to a wide range of applications. Keywall can be lapped at corners without adding thickness to joints. Full embedment and a complete bond are assured.

Galvanized Keywall can be stored any place without rusting. No wonder Keywall wins wide acceptance among builders and architects!

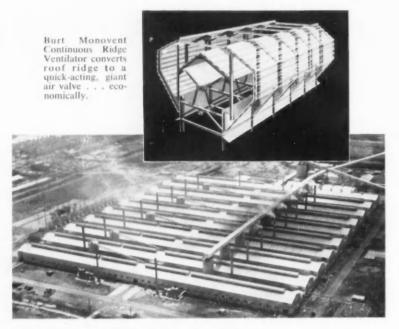
Keywall is made for the following wall thicknesses: 4", 6", 8", 10" and 12".

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The huge new Reynolds Metals Company's aluminum plant at Sheffield, Alabama, conditions the air in each manufacturing operation with a carefully engineered system of modern Burt Ventilators.

On the pot lines, where the snow-white alumina powder is transformed into aluminum in a bath of molten cryolite—where great crucibles of molten metal swing down the aisles—84" aluminum Burt Monovents keep the air moving out fast. Over 7,200 lineal feet of this continuous ridge type Burt ventilator—more than 1½ miles—ventilator—more than 1½ miles—ventilator—ine pot line buildings uniformly and economically. Nearly 400 lineal feet of 60" Burt Monovent conditions the service building.

Atop the adjoining rectifier building, with its thousands of square feet of electrical equipment, twenty-five 54" aluminum Burt Free Flow Fan and Gravity ventilators provide fast, bigvolume exhaust.

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The Burt Manufacturing Company

48 E. South St. AKRON 11, OHIO MEMBER AIR MOVING & CONDITIONING ASSOCIATION, INC.

Office Literature

continued from page 236

Corrosion-Resisting Coatings

Bulletin 100 features a simplified chart for selecting protective coatings according to service requirements, with physical properties and chemical resistance shown in easy-to-read columns. 4 pp. Carboline Co., 32 Hanley Industrial Court, St. Louis 17, Mo.

How to Design Pole-Type Buildings Revised second edition presents time-tested design procedures for proportioning structural members of pole-type buildings of all sizes, kinds and uses. Extensive charts, tables and illustrations are supplemented by line drawings showing construction details of selected typical buildings. 72 pp., \$1.50 postpaid. American Wood Preservers Institute, 111 West Washington St., Chicago 2, Ill.

Fuel Burning Systems

Bulletin 1255 lists and describes eleven Model 3 oil, gas, and combination oil and gas burners for firing boilers or other heat exchange equipment. 8 pp. Orr & Sembower, Inc., Box 1138, Reading, Pa.

Convertors for Hot Water Heating Bulletin No. 303-A contains hot water heating convertor selection data, including product dimensions, connections, operating capacities, temperatures, and pressure losses. 12 pp. Patterson-Kelley Co., Inc., East Stroudsburg, Pa.

Automatic Control Systems Guide . . . for Architects and Engineers (A.I.A. 30-E) describes and illustrates electric, electronic and electrionic automatic control systems for heating, ventilating and air conditioning. Bulletin F-8944, 8 pp. Barber-Colman Co., Rockford, Ill.

Vertical Transportation

(A.I.A. 33-G) Covers operation and features, sizes and capacities, minimum pit depths and overhead heights, and other pertinent data on passenger and freight elevators. 32 pp. Otis Elevator Co., 260 Eleventh Ave., New York 1, N. Y.

Safety Treads and Nosings

(A.I.A. 14-D-1) Describes and illustrates complete line of aluminum base, abrasive filled safety treads and nosings. 20 pp. Wooster Products, Inc., Foot of Spruce St., Wooster, Ohio

*Additional product information in Sweet's Architectural File, 1958

more literature on page 298

Creative Valls by STARK THE HIGH QUALITY STRUCTURAL GLAZED TILE

Stark Structural Glazed Tile is the versatile, low-cost material for imaginative walls. This striking feature wall is not only unusual but strong, practical, low in maintenance cost and permanently beautiful.

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Howard Seminary, West Bridgewater, Massachusetts. Eleven classrooms. Designed by Harvey and Provost.

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USS AmBridge School Components have helped to open a whole new vista of school design to you. They make it possible for you to deliver an expression of the most modern concepts of classroom construction to your clients in the shortest possible time.

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Please send me your informative 24-page booklet which contains complete description of AmBridge Modular Schools.

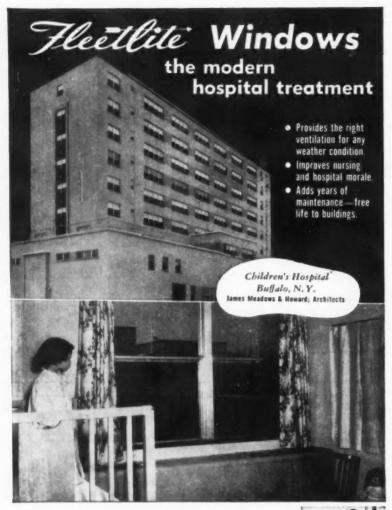
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The tight weatherstripped and interlocking construction of Fleetlite windows stops drafts, dust, noise, rain and snow for extra comfort. Double window design provides the insulating air space that saves heating and air conditioning costs and permits indirect ventilation during rainstorms. Fleetlite windows never need painting or puttying. Save maintenance costs.

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Office Literature

Industrial Door Literature File Reference literature includes complete descriptions and specifications on four types of commercial-industrial doors. Crawford Door Co., Hoover Rd., Detroit 5, Mich.

Thiokol Technical Bulletin

Details results of laboratory and field tests with Thiokol liquid polymer/epoxy resin concrete adhesives, and describes methods of applying them for a number of uses in highway and building construction and maintenance. 8 pp. Thiokol Chemical Corp., 780 N. Clinton Ave., Trenton 7. N. J.

Flooring Products Catalog

All-Products Catalog illustrates Tile-Tex flooring patterns and colors, and provides a comprehensive selection table. Adhesives, waxes, cleaners and underlayments are also covered. 16 pp. Tile-Tex Div., The Flintkote Co., 630 Fifth Ave., New York, N. Y.

Kenco Submersible Pumps

(A.I.A. 29-D-5, 30-C-5) Eight page catalog lists physical dimensions, pumping capacities, electrical data and specific features for each model in Kenco line of domestic and industrial submersible pumps; and gives guide-form specifications. Kenco Pump Div., 1305 Oberlin Ave., Lorain, Ohio

Light Reflectance Charts

Indicate light reflectivity of colors in Matico lines of asphalt and vinylasbestos tile. Mastic Tile Corp. of America, Vails Gate, N. Y.

Low Voltage Power Protector

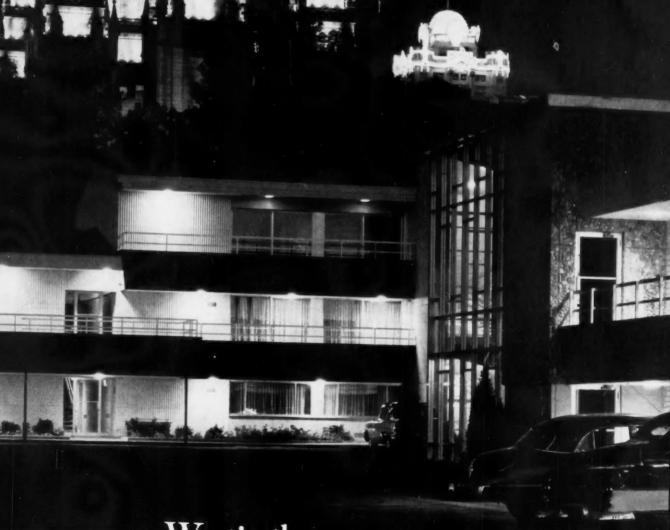
Provides detailed information (photos, tables, charts, curves, guide form specifications, dimensions and ratings) on application, features and operation of Type LB-1 power protector for heavy duty commercial building applications, 480 volts AC and under. 8 pp. General Electric Co., Schenectady 5, N. Y.

Acoustical Ceiling Design

Covers, in simple diagrams and brief captions, the essentials necessary to meet good ceiling construction standards: true sound isolation, low cost partitioning, rated fire protection, easy access to utilities, and low cost maintenance. Acoustical Tile Adhesives Manufacturers, c/o The Schuyler Hopper Co., 12 East 41st St., New York 17, N. Y.

*Additional product information in Sweet's Architectural File, 1958

New Utah Motor Lodge
Is Powered-Up to Serve
Both Travelers and Conventions



YOU CAN BE SURE ... IF IT'S Westinghouse

Front Cover—Night photo of Hotel Utah Motor Lodge innercourt parking area shows spires of Salt Lake City's famed Mormon Temple in background. Just right of center above motor lodge is beehive top of Hotel Utah.

Close-up of entranceway to Salt Lake City's new motor hotel—the Hotel Utah Motor Lodge. ▶



Parking area entrance to the main building of motor lodge.

Dowd Leiter, Executive Assistant Manager, Hotel Utah; J. J. Nielsen, Westinghouse Sales Engineer; Don Black and Max Waddoups, Partners, Midwest Electric Co.; and Van Livingston, Assistant Manager, Hotel Utah, look at construction plans and architect's rendering of the new motor lodge.

J-94084-2





Hotel Utah Motor Lodge is conventioneered

The new motor lodge, recently constructed by the Hotel Utah in Salt Lake City at a cost of approximately three and one-half million dollars, provides important supplementary facilities to the hotel's services.

Besides the 158 additional rooms now available to Salt Lake City visitors, the motor lodge includes an auditorium capable of seating 1500, an exhibition hall, a 175-seat restaurant known as "The Crossroads" with an all-electric kitchen and a large outdoor swimming pool capable of accommodating all the guests at both the hotel and the motor lodge. Located just across Temple Square from the Hotel Utah, the new motor lodge is comprised of four buildings, three of which are devoted to guest accommodations and one for administration and offices. The largest single building also houses the auditorium and exhibit hall, as well as the restaurant and multiple shops to take care of the guests' needs. Because of the multiple functions combined in this new motor lodge, electrical requirements are large. The average amount of electrical current being used at any one time is estimated to be equivalent to that required to power 800 homes.

Westinghouse electrical equipment was specified for the new motor lodge as a result of the hotel's previous experience of excellent performance of Westinghouse electrical distribution equipment.

Design of the system was based on the possible interchangeability of parts and equipment between the motor lodge and hotel, so that it is unnecessary to deal with two different types of systems in ordering replacement parts or performing any necessary maintenance work.

1.94084-3

YOU CAN BE SURE ... IF IT'S

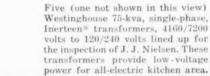
Westinghouse

WATCH "WESTINGHOUSE LUCILLE BALL-DESI ARNAZ SHOWS"

S

Over 275 Pages Westinghouse Data in Sweet's Architectural File

Interior view of one of the second floor guest units shows Van Livingston seated at writing desk. Each unit is supplied with recessed incandescent and fluorescent lighting. Spotlights accent the color and material decor. W. H. Tuckett, WESCO Salesman, directs the attention of Max Waddoups and Gerald B. Smith, Building Superintendent, Hotel Utah, to the Westinghouse 2000-amp, low-impedence bus duct in transformer vault. The transformer shown is single phase, 250 kva, oil-filled, which steps down the incoming 4160 volts to 120/240 volts for distribution throughout the motel.











Motor Lodge is conventioneered (continued)

Westinghouse is prepared to help you in the solution of any Powering-Up problems you may have in the planning of new or modernization construction. See the Westinghouse Electrical Construction Engineer nearest you, or write Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pennsylvania.

OWNER: Hotel Utah, Salt Lake City

ARCHITECT: L. Robert Gardner, Cedar City, Utah CONSULTING ENGINEERS: Blomquist & Brown,

Salt Lake City

GENERAL CONTRACTORS: Jensen Construction Co., Salt Lake City

ELECTRICAL CONTRACTORS: Midwest Electric Co., Salt Lake City

WESTINGHOUSE DISTRIBUTOR: Westinghouse Electric Supply Co., Salt Lake City

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WATCH "WESTINGHOUSE LUCILLE BALL-DESI ARNAZ

Gerald B. Smith and Max Waddoups look into cubicle of Westinghouse control center as Don Black reviews specifications. This control center and building type switchboard provide centralized control and protection of all important lighting feeder and motor circuits.

Swimming pool at the Hotel Utah Motor Lodge is provided to accommodate guests of both the hotel and the motor lodge.





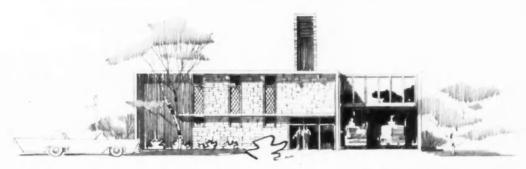
help integrate fire station into suburban scene

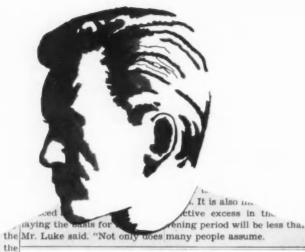
Diagonal muntin bars in PELLA WOOD CASEMENT WINDOWS give attractive relief from the horizontal and vertical patterns in this redwood and stone fire station. As a utility feature, PELLA muntins are removable for fast, easy cleaning of glass.

Large 24" x 68" glass size PELLA CASEMENTS above and below the rear balcony provide a novel variation from stereotyped window arrangements and lend a home-like quality to

dormitory and lounge areas, PELLA WOOD CASE-MENT WINDOWS — with their built-in ROLSCREEN feature — deserve a place in your plans for municipal, commercial and residential buildings.

Glass height up to 68", glass width up to 24". Full specifications in Sweet's. For the nearest U. S. or Canadian distributor, consult your classified telephone directory. ROLSCREEN COMPANY, PELLA, IOWA.



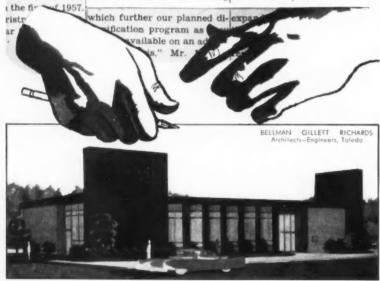


rday, The Alberene Stone adds "Dark Accent" with one Beauty That Requires no Maintenance

ompanies in- The Toledo Trust Company's and loss of surface polish. It arel and leather natural silicate stone that is dark gray; green to black; and reased their bor- weatherproof. Its low absorb- jet black. Also economical slab ency rate, fine grain and ab-thicknesses of %" to 14". 1,000,000 loans to sence of stratification predown \$455,000,- vent spalling and splitting in technical assistance address: first of the year, freezing temperatures. Its all-Alberene Stone Corporation, ie same date they silicate mineral components re- 386 Fourth Avenue, New York 56,000,000, down sist chemical attack, staining 16, N. Y., Dept. R.

rrowings \$90,- Branch Bank exemplifies the requires no maintenance. setal and metal beauty and utility of Alberene Architects are also offered a nies \$52,000,000. Black Serpentine Stone - a color range of silvery gray to

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The Record Reports

On the Calendar

March

- University of Illinois Biennial Festival of Contemporary Arts; through Apr. 5-University of Illinois, Urbana
- 11-13 45th Annual Convention, Michigan Society of Architects-Statler-Hilton Hotel, Detroit
- 13-14 Middle Atlantic Regional Con-A.I.A., sponsored ference, jointly by Virginia and West Virginia Chapters - White Sulphur Springs, W. Va.
- 18-24 New England Home Show, sponsored by Home Builders Association of Greater Boston -Commonwealth Armory, Boston

April

- 5-10 Fifth Nuclear Congress-Public Auditorium, Cleveland
- 6-10 Atomic Industrial Forum Atom Fair-Cleveland
- Eighth Annual Meeting, Building Research Institute-Penn-Sheraton Hotel, Pittsburgh
- 12-17 21st Annual Convention, National Association of Architectural Metal Manufacturers-Monteleone Hotel, New Orleans
- 24-25 Great Lakes Regional Conference, A.I.A.-College of Architecture and Design, University of Michigan, Ann Arbor
- 26-30 28th Annual Conference. American Institute of Decorators-Plaza Hotel, New York

May

- Annual Meeting, Air-Conditioning and Refrigeration Institute-The Homestead, Hot Springs, Va.
- Eighth Annual Convention. National Parking Association New Orleans
- Third Annual Convention. Specifications Construction Institute-Palmer House, Chicago
- "Action for Better Communities," a national urban renewal conference under the joint sponsorship of ACTION and the Newark Economic Development Committee-Newark, NI
- National Convention (second of three in 1959), American Society of Civil Engineers-Cleveland
- "Recent Sculpture, U.S.A." exhibition; through Aug. 16-Museum of Modern Art. New

continued on page 310



. . . DESIGN COMPLEMENT FOR INSULATING CURTAIN WALL PANELS

The wide selection of fixed and ventilating PELLA WOOD MULTI-PURPOSE WINDOWS makes them a "natural" for combining with cost-saving insulating curtain walls. Used this way, the pleasing proportions of PELLA wood mullions provide a third dimension to glass and panel areas.

When your plans for institutional or commercial buildings include insulating curtain wall construction, try working with Pella MP wood windows. Full specifications in Sweet's, or write for copy. For the nearest U. S. or Canadian distributor, see the classified telephone directory. ROLSCREEN COMPANY, PELLA, IOWA



... The modern trend in better
one-story school construction is toward

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... Economical—Practical—Firesafe Construction

Another noteworthy example of the trend in one-story school construction toward reinforced concrete framing is the Deerfield Terrace Elementary School in Linden, New Jersey. Architects and Engineers Finne-Lyman-Finne, of Elizabeth, New Jersey, reported that the cost of the new school constructed with reinforced concrete frame was competitive with ordinary wall-bearing type of construction.

Photographs below show the reinforced concrete joist

roof during construction by J. M. Straus & Co., Newark, New Jersey. Note the exposed roof of the playroom-gymnasium. Sprayed-on acoustic material was applied directly to the rough concrete to give a finished ceiling. The roof is cantilevered over the classroom windows to provide shade.

Before you build a school, hospital, or commercial building, investigate this economical, flexible, firesafe, and timesaving medium of construction.



Placing the forms for reinforced concrete joist roof



Underside of concrete joist roof after stripping forms.



View of the underneath side of the concrete joist roof after spraying with acoustic material. This presents an attractive, economical finish for the ceiling.

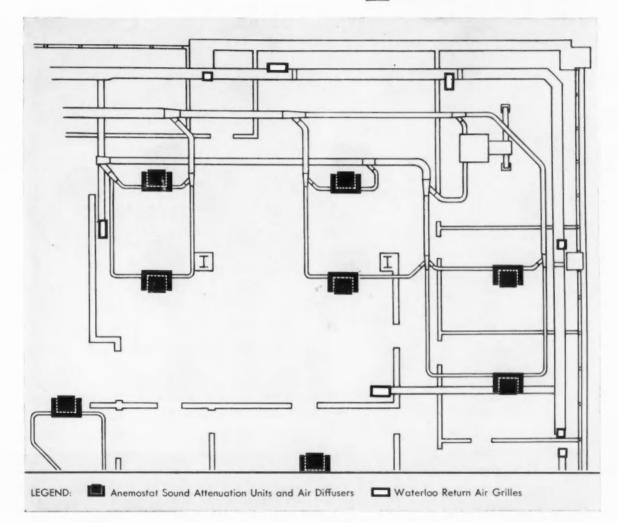


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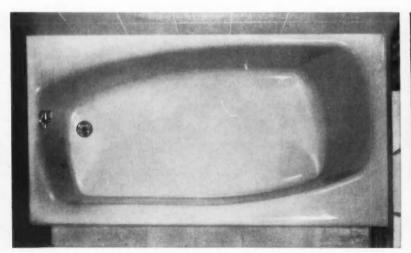
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Swept-back design highlights straight, unbroken apron of the beautiful new CONTOUR bathtub. Tapered rim provides handy grip when sitting down or getting up—makes rim easy to step over.



The shape of the well brings the back of the CONTOUR bathtub close for easy, no-stretch cleaning. The wide ledge is perfect for toiletries. It can be used as a seat while cleaning the tub or bathing the children.



Monogram fittings are another note of distinction. Classic in design, they feature a satin chrome finish...can be monogramed with owner's initials.

The biggest design news in bathtubs since they lost their legs...the new American-Standard

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Here's the first "something new" in bathtubs in 25 years... the "something new" that will add lots of extra interest to the bathrooms you design!

This new American-Standard CONTOUR bathtub was designed for maximum beauty, maximum comfort and greatest ease of cleaning. The diagonal shape is a functional as well as a beauty feature that will appeal to your clients. It provides maximum width where needed for the most pleasurable bathing and

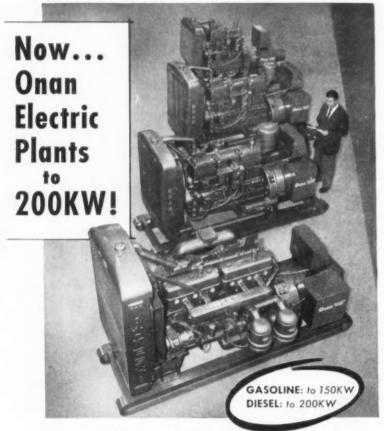
showering . . . maximum comfort all the way. It has two wide ledges that serve as comfortable seats or handy shelves.

Like all American-Standard bathtubs, the CONTOUR is made of lifetime cast iron with a thick coat of gleaming enamel in six high-fashion colors and white.

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New Magneciter* Generator gives important performance advantages

Now you can have Onan engineering and Onan dependability in high-capacity plants, too! In gasoline-powered models, 100, 125, and 150KW sizes have been added to the line. New diesel models include 10, 15, 25, 35, 50, 60, 75, 100, 125, 150, 175, and 200KW capacities. All standard voltages are available.

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The Record Reports

- 14 Industrial Conference, Society of Industrial Realtors—Pitts-burgh
- 20-21 Conference on Building Illumination, sponsored by Building Research Institute—Statler-Hilton Hotel, Cleveland

Office Notes

Offices Opened

Ralph Appleman, Architect, announces the opening of an office at 208 S. W. Stark, Portland 4, Ore.

Crawford & Banning, Architects, is the name of a partnership formed by Eugene E. Crawford, A.I.A., and George V. Banning, A.I.A., at 15 West End Ave., San Rafael, Calif.

West End Ave., San Rafael, Calif.
Eberlin and Eberlin, Consulting
Engineers, is a partnership formed
by Ralph Eberlin and Monroe M.
Eberlin, his son; their office is at
123 E. 77th St., New York 21.

The firm of C. J. Kordys and Ed. A. Oldziey, Architects, has been formed by those named at 1379 Hamburg Tpk., Wayne, N. J.

Manson, Jackson, Wilson & Kane, Architects, is a partnership formed by Elmer J. Manson, Edward Jackson, Dixon S. Wilson, and William J. H. Kane, all A.I.A., at 520 Cherry St., Lansing 33, Mich.

Snyder, Palmer, Toussaint and Associates, Inc., is the new name of the consulting engineering firm formed by the association of Eugene P. Palmer, mechanical engineer, and Francis J. Toussaint, electrical engineer, with J. Robert Snyder, mechanical engineer; their office is at 1645 Hennepin Ave., Minneapolis.

Firm Changes

Charles W. Johnston, A.I.A., announces that his firm is now Johnston & Smith, Architects, with Robert J. Smith as junior partner; the firm's address is 13 N. 8th St., Payette, Idaho.

A. M. Kinney and Charles Burchard, partners in A. M. Kinney Associates, Engineering & Architectural Consultants, 2912 Vernon Pl., Cincinnati 19, and 60 E. 56th St., New York 22, announce the naming of five additional partners: Marvin E. Mathewson, Russel W. Bandomer, John R. Morris, Malcolm G. Duncan, and Max Cardiff. Also, Ernest V. Manning has been named a project architect with the firm.

Charles Luckman Associates of 9220 Sunset Blvd., Los Angeles 46, and 24 E. 51st St., New York 22, an-

continued on page 318

for the first time... an authoritative manual on Color vs. Illumination Levels

Of keen interest to every architect is this unique sixteen-page manual, just off the press, discussing and illustrating the selection of interior decorating colors as they relate to various levels and types of illumination. Written by Walter C. Granville (currently president of the Inter-Society Color Council), the manual is attractively illustrated in full color—contains recommended color palettes and packs of appropriate color chips. Handsomely styled, compact, easy to use, this book brings a fresh and authentic approach to the use of color in modern architectural design. Send the coupon





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YOU CAN'T SEE IT...YOU CAN'T FIND IT...
IT'S COMPLETELY HIDDEN...NOT ON THE DOOR
OR IN THE FLOOR, BUT INSIDE THE TRANSOM BAR!

HERE IS SHEER ARCHITECTURAL BEAUTY. The dramatically new patented Kawneer Concealed Overhead Closer entrance unit. First overhead closer totally concealed in a 1%'' x 4%'' transom and offered as a stock entrance package.

Nothing projects out or down to clash with its crisp, orderly design. There are no surface-

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Never before has an overhead closer-controlled entrance been so good to look at—or had so many time and money-saving features.



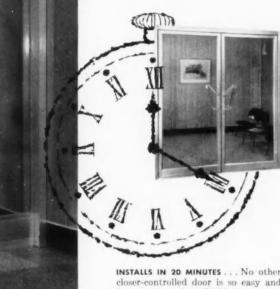
IN BUSINESS OFFICES, tasteful simplicity of the Concealed Overhead Closer Entrance gives customers their first good impression of the company.



IN STORES, the distinctive, functional appearance of the Kawneer entrance expresses the personality of the owner to passersby, invites them in.



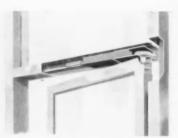
IN HOSPITALS, it imparts an exciting new beauty and utility to doorways. Installs in existing buildings in a minimum time, without noisy air hammers.



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For use with incandescent lamps up to 10,000 lumens, or 620 watts multiple; or with ballast in fixture for mercury vapor lamps up to 250 watts. Choice of five IES light patterns; types I, II, III, II 4-way, and V.

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THE NEW L-M PTL provides elegance of appearance and efficiently controlled light distribution. Available in brushed aluminum, or pastel colors, for 3- or 7-inch poles. For incandescent lamps, or with ballast for mercury vapor lamps. The PTL is also available with small photo control. Prices start at \$44.



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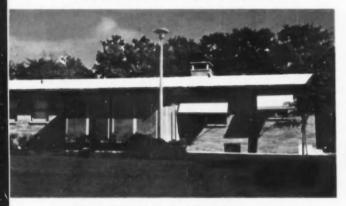
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THE PTL is excellent for drive-ins, restaurants, hotels, motels, store fronts, shopping centers, water-front areas, railway stations, and many other applications.

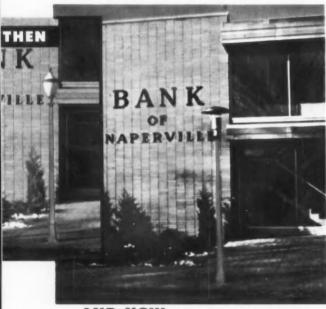
Either incandescent or mercury lamps may be used. When the PTL is used for mercury vapor, the ballast is mounted in the fixture where it is easily accessible.



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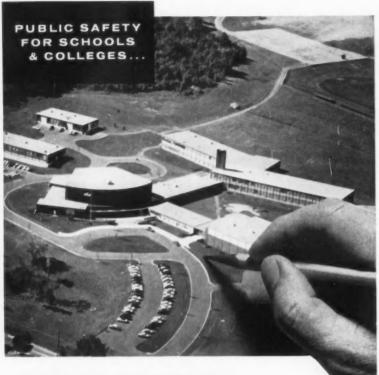
Automatic . . . flexible . . . expandable . . . The DuKane Hospital Communications System is the modern successor to nurses' call systems. From this attractive, functional master unit, the duty nurse can answer patients' calls, automatically, by simply pressing a button. Or, she can answer selectively by dialing just two digits. Or, she can dial rooms, duty stations, or corridor reply stations and talk with all locations. With DuKane, she has a complete floor communications system. Modern, attractive bedside stations incorporate combinations of features needed for modern hospital usage. Lavatory stations and emergency stations, too. Corridor door lights corridor answering stations and even wireless voice paging to individual doctors are engineered into DuKane systems as needed. You get special features and tailor-made flexibility because DuKane systems are custom engineered from mass-produced components. Your nearest DuKane man is listed in the Yellow Pages He is a factory-trained engineering distributor who will act as your consultant on any sound system or communications problem.

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The Record Reports

nounces the appointment of Serge P. Petroff, A.I.A., as director of architecture for the firm's New York branch.

McEntire, White & Pendergrast announces that Morris R. Jellison has been admitted to the firm and that its name is now McEntire, White, Pendergrast & Jellison, Architects: the firm's offices are in Alaska at 131 Fifth Ave., Anchorage, and 201 Chena Bldg., Fairbanks.

William L. Pereira & Associates, 1231 West 5th St., Los Angeles 17, announces that three former vice presidents of Pereira & Luckman have become partners. They are: Gin D. Wong, A.I.A., James H. Langenheim, and Jack L. Campbell.

The firm of George Pierce-Abel B. Pierce, 2200 Welch Ave., Houston, announces the elevation of two associates to partnership: E. J. Goodwin, Jr., and Robert V. Flanagan.

Sargent-Webster-Crenshaw & Folley, 2112 Erie Blvd., E., Syracuse 3, N. Y., announces that Robert S. Steele has been appointed senior planner in the firm's division of city and regional planning. Mr. Steele is assisting Hollister Kent, director of the division.

Waasdorp, Northrup and Austin is the new name of the firm formerly known as Waasdorp and Northrup. The present partners of the firm, at 740 East Ave., Rochester 7, N. Y., are: Leonard A. Waasdorp, F.A.I.A., Charles V. Northrup, A.I.A., Roger O. Austin, A.I.A., Carl F. W. Kaelber, Jr., A.I.A., Herbert P. Kopf, A.S.C.E., and William P. Roberts, A.I.A.

Minoru Yamasaki & Associates is the new name of the firm formerly known as Yamasaki, Leinweber & Associates, because of the retirement of Joseph W. Leinweber, A.I.A. The principals of the firm, whose address is 1025 E. Maple Rd., Birmingham, Mich., are: Minoru Yamasaki, Cass Wadowski, William Jarratt, Frank Straub, and Gunnar Birkerts. Recently appointed chief draftsman and head of the construction department was Walter P. Graydon.

New Addresses

Donald Cowan, Architect, Wilson-Bates Bldg., Hillsboro Rd., Nashville, Tenn.

Victor Gruen, A.I.A., New York office: 2 W. 13th St., New York 11.

Eero Saarinen and Associates, 1300 N. Woodward Ave., Birmingham, Mich.

more news on page 322

318



The acrylic luminaires are still as white as new

Yellowing of lighting fixtures and panels is a problem you can easily avoid — just be sure they are made of LUCITE acrylic resin. And when you expand facilities or replace fixtures, don't make the mistake of using other plastics that look white at first. The contrast may be costly after a few years.

Acrylics such as LUCITE offer far superior resistance to yellowing when compared with other materials commonly used in lighting fixtures. In fact, tests show them to be 20 times better. That's why standards recommended by the Society of the Plastics Industry are far higher for acrylics (see references below). And that's why fixtures made with Lucite will not turn yellow and should provide satisfactory lighting for the lifetime of the building. In addition, Lucite is sturdy...shatter-resistant; it transmits light as readily as fine-grade optical glass.

Make sure your lighting installations

use panels and lenses of EUCITE for white-as-new lighting during the years to come. For more information on the use of LUCITE in lighting, write to: E. I. du Pont de Nemours & Co. (Inc.), Polychemicals Dept., Room L-4-3, Du Pont Building, Wilmington 98, Del., or send the attached coupon.

REFERENCES: (1) "Property Specifications for Polystyrene Used in Fluorescent Luminaires," June 1957. (2) "Proposed Property Specifications for Aerylies Used in Luminaires," Minutes of meeting held Jan. 16, 1958. The Society of the Plastics Industry.

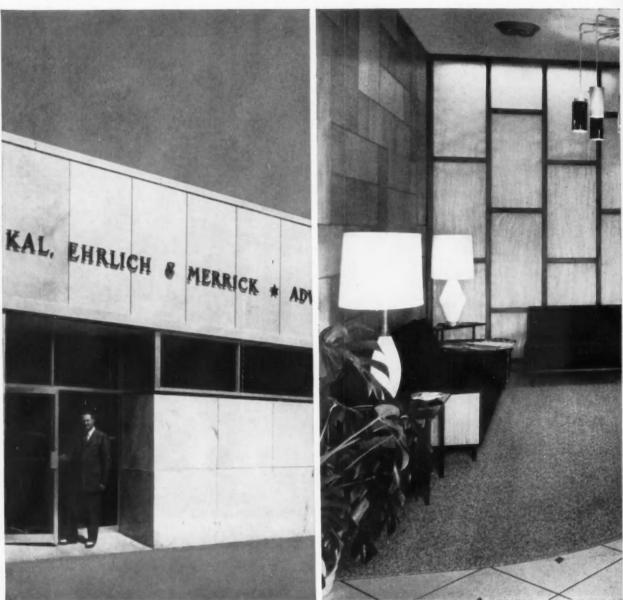
LUCITE ACRYLIC RESINS



BETTER THINGS FOR BETTER LIVING

E. I. du Pont de Nemours & Co. (Inc.), Polychemicals Department Room L-4-3, Du Pont Building, Wilmington 98, Delaware
In Canada, Du Bont of Canada Limited B. O. Boy 660, Montreal Oughes

☐ Please send me more information on the use of LUCITE in lighting.



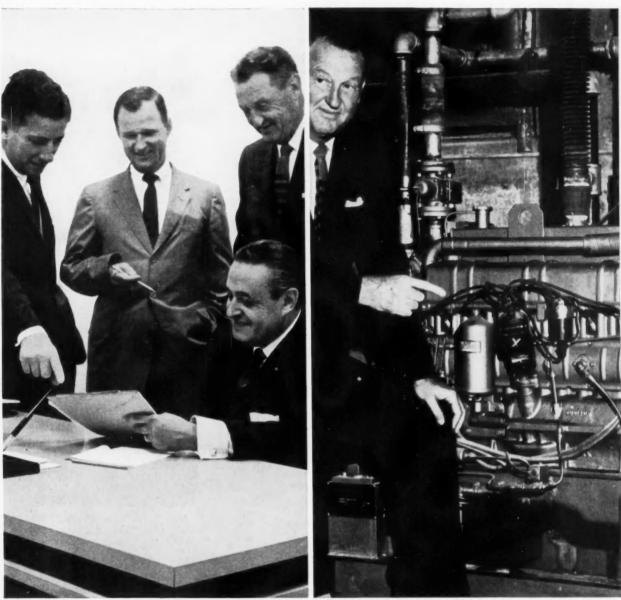
Modern air-conditioned home of Kal, Ehrlich & Merrick, Washington, D.C. advertising agency

"Nothing to do-but enjoy it, with our all-

Says Harry L. Merrick, Sr. President, Kal, Ehrlich & Merrick Advertising Agency

"Only the best air conditioning system would do for our new building, and experience proves the best is definitely gas", continues Mr. Merrick. "Our Ready-Power air conditioner gives us the exact climate control we want every day of the year . . . and it's extremely inexpensive to operate."

Ready-Power's exclusive variable speed operation offers constant, precise control of humidity and temperature without the variations common to on-off systems.



Gas-operated unit provides exact climate control, adds to the efficiency of agency's creative people.

year READY-POWER GAS air-conditioning!"

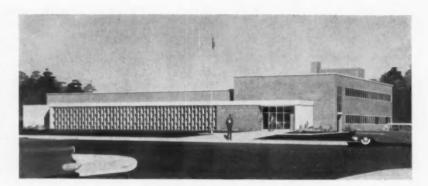
Because they combine the outstanding economy of gas fuel with automatic metering to match the load on hand, Ready-Power units have the lowest known operating costs . . . less than a penny per ton per hour!

For information on how you can benefit by installing modern Gas air conditioning equipment, call your Gas Company's commercial specialist or write to the Ready-Power Company, Detroit 14, Michigan. American Gas Association.

Designs for Three Post Offices Recently Accepted by GSA

The continuing program of Federal buildings throughout the country includes these three whose designs were recently accepted by the Public Buildings Service of the General Services Administration.

At top is the Federal Building, Orange, Texas; architects: the firms of Pitts, Mebane & Phelps and George L. Ingram, both of Beaumont, Texas. The building has a gross floor area of over 25,000 sq ft; costs are not to



EXCLUSIVE WITH HUSSEY CLOSED DECK ROLL - OUTS





NO EXCESSIVE DEFLECTION WITH UNBRACED SPANS



NO UNSUPPORTED CANTILEVER ENDS



Minimum Deflection Box Girder Construction

Only Hussey Closed Deck Roll-Out gym seats provide box girder construction with 8 steel angle braces and 8 steel diaphragms per 16' row. This virtually eliminates deflection, increases rigidity, prevents excessive stress or strain, and avoids wear at bolted connections.

The box girder sectional modulus of Hussey Roll-Outs (55 inches³) is 25 to 30 times greater than that of any other telescopic or folding bleachers. This means safe seating, low maintenance costs, a long life span, and insures high investment value.

For the best in safe seating, specify Hussey's Closed Deck Roll-Outs!

See Sweet's Catalog 23J/HU.

HUSSEY MANUFACTURING CO., INC.

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North Berwick, Maine

exceed \$653,000. The single-story postal area has a sun-control grill in front. The two-story portion is the office wing. The walls, rising from a Texas granite base, are of face brick with cut stone coping and trim.

The center rendering shows the Federal Building, Livingston, Ala.; architects: Pearson, Tittle & Narrows of Montgomery. The building has a gross floor area of over 14,000 sq ft; costs are not to exceed \$300,000. The L-shaped structure has a



brick façade and curtain walls of glass and cast stone. Framing for wall panels and coping is of aluminum.

At bottom is the Federal Building, Monticello, Fla.; architects: Barrett, Daffin & Bishop of Tallahassee. The building has a gross floor area of 12,200 sq ft; costs are not to exceed \$323,000. The two-story structure with portico has exterior walls of gray brick and white finished concrete with ceramic tile spandrels.



more news on page \$28

for complete protection from the ravages of

BACKWATER

plan to use



Backwater Valves

in these locations...



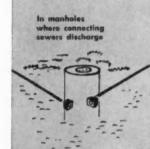






In drain it

Drain lines that are unprotected against backwater are a potential menace to health and safety. Whatever causes sewer or drain lines to "back up" — rain, snow, or siphonic action — the force carries muck-laden, disease ridden waters into populated areas, creating a health hazard, costly repairs and unsanitary conditions. Most insurance policies do not cover this type of damage.



into open bodies of water

Be sure to give every waste line positive protection against backwater by using Josam Backwater Valves. Their engineered construction has a special sensitive flap valve that opens up to the full size of the pipe for discharge of waste water, but closes instantly at slightest backflow . . . positively preventing any entry of backwater into the building.

Josam Backwater Valves cost so little compared to the damage they prevent . . . and they are permanently dependable. Use them at all "backwater" danger points.

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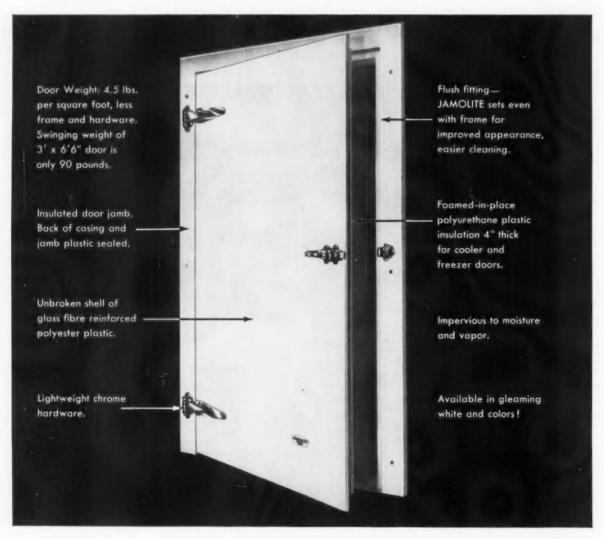
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Zone

NEW concept in food service cold storage doors: Jamison JAMOLITE*-Lightweight Plastic Doors



better appearance • improved performance • lower cost

• IT'S HERE TODAY—a revolutionary new concept in cold storage door design and construction—a door as easy to install as a household door. For the Food Service Industry, JAMOLITE Lightweight Plastic Doors now bring new, practical advantages:

smooth, easy-to-clean surface rigid, one piece construction will not warp superior insulating efficiency in both door and frame Investigate this brand new Jamison development for either replacement or new construction. Write today for all the facts on new JAMOLITE Lightweight Plastic Doors to Jamison Cold Storage Door Co., Hagerstown, Md.

*Jamison trademark



Nearby-and 30 years apart...



Associated Architects. Harrison & Abramovitz and John B. Peterkin

General Construction. Turner Construction Co.

Owners. Galbreath Corporation

It's good for a LIFETIME, made of

ALLEGHENY STAINLESS

Warehouse stocks carried by all Ryerson steel plants

A-L products: stainless, high-temperature, electrical and tool steels: magnetic materials, and sintered carbides

two generations of Allegheny Stainless on the skyline

New York City's new 42-floor Socony Mobil Building and famous Chrysler Building have much in common: close in location, big in size, both fine examples of Allegheny Stainless Steel applications.

The Chrysler Building pioneered in the use of stainless in architecture and construction technique. It was capped with a stainless steel roof of multiple arch design, surmounted by a stainless steel spire.

Periodic examinations of the Chrysler spire and roof show that the stainless is just as sound today as it was thirty years ago at construction. It's covered now with the soot and grime of the city, but it's bright as new underneath. With just ordinary cleaning, it would shine again.

The Socony Mobil Building, completely sheathed in stainless, is the world's largest metal-clad building. Over 10 acres of preformed stainless steel panels, embossed with three-dimensional patterns of triangular shapes for a pleasing light and shadow effect, are used.

In the Socony Mobil Building, as in the Chrysler Building, Allegheny Stainless contributes toughness, durability, and beauty. Permanent protection against weather and corrosion with minimum maintenance is the net result.

In addition to the building panels, spandrels and pier covers, Allegheny Stainless is used in the Socony Mobil Building's window sashes and frames, elevator cabs, doors and in many other architectural applications.

The services of our architectural division are yours in any way. A 48-page book showing the multitude of standard, factory-made stainless steel building components, plus the name and address of the manufacturer who has the parts available, is yours for the asking. Just write, Allegheny Ludlum Steel Corporation, Oliver Bldg., Pittsburgh 22, Pa.

ADDRESS DEPT. R-15

How to move into commercial buildings . . . weeks faster

Tectum Roof Decks: Super

Tectum roof decks place large areas under roof faster, with greater savings, in one labor operation. Here's why:

TECTUM GOES DOWN DRY. Large, light weight planks of wood fiber Tectum are quickly erected without special labor or equipment requirements. No curing, no wasted waiting time. The top side is ready for built-up roofing without delay. And when the deck goes down, the interior ceiling is also finished.

FRAMING. Architects have found that Tectum's relative light weight is conducive to savings in framing costs, too. A slightly higher price for Tectum's many advantages is more than offset by the savings in structural steel. As a bonus, the many inherent benefits of Tectum's composition can be utilized at no extra cost.

ONE MATERIAL — ONE LABOR CHARGE. Tectum is an excellent insulation, structural deck and

FOOD TOWN SUPER MARKET, Minneapolis, Minn. Architect: S. C. Smiley & Associates, Minneapolis



Imaginative design illustrates Tectum's versatility in a variety of new buildings

Markets

acoustical ceiling when exposed over beam or joist. It is firesafe, termite resistant, rot and fungusproof. Its textured "ceiling" surface is light reflective and attractive. Its use in both public and private construction attests to its natural good looks. Get in touch with your Tectum representative today; find out how Tectum roof decks can save time and money.

Contractor: Rydeen Construction Co., St. Paul.





St. Mark's Episcopal Church, Columbus, Ohio. Decorative and functional use of Tectum for the two-slope, ceiling design and sidewall in the narthex of the church. Acoustical control plus decorative good looks. Architect: Brooks & Coddington, Columbus. Contractor: Leo B. Ruisinger, Inc.



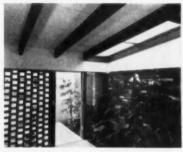
Westgate Elementary School, Edmunds, Washington. School officials are very happy with appearance and cost. 20 classroom school uses Tectum roof deck over exposed web joists, throughout. Architect. D. F. Miller, A.I.A. and E. D. Morris, Edmunds, Contractor: Glacier Construction.



U. S. National Bank of Portland, Hillsboro Branch. Attractive Tectum roof deck and acoustical panels enhance the interior of this Oregon bank. Beams are painted a contrasting color. Architect: Williams & Matin. Engineer: Cooper & Rosé.



Lebanon Lanes, a part of the L.M.S. Office Building, Pittsburgh, Pa. This new building uses both Tectum roof deck and 1" suspended acoustical board. Acoustics are ideal. Designers & Builders: Larson Construction Company, Pittsburgh.



The Lanai, residence, Dearfield, Florida. The Lanai room is illustrated, showing how Tectum roof deck complements other textures and materials. All roof areas including overhang are Tectum plank. General Contractor: John Apetz. Robinson Real Estate in charge of sales.

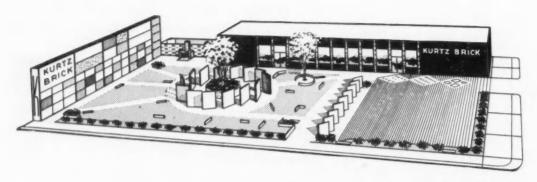


Skipper Motel, Tampa, Florida. For tourist comfort, sound conditioned motels are a necessity in these busy areas. Tectum over concrete beams is featured in this beauty. The second floor is composed of poured concrete on Tectum formboard "left-inplace" as an acoustical ceiling for the first floor. Architects: Goiswald & Reynolds, St. Petersburg.



Tectum Corporation, Newark, Ohio. Regional offices in Philadelphia, Atlanta, Columbus, Chicago, Dallas, Beverly Hills, Seattle and Toronto, Canada. Distributors in all leading areas. Plants in Newark, Ohio and Arkadelphia, Arkansas.







The Citizens State Bank, Oklahoma City, Oklahoma

A new concept in bank structure design, combining distinctive styling with maximum space arrangements for all banking services

Manufacturers of ROTO-SWING Stock and Custom size Balanced Doors . . . Conventional Swing Doors . . , and complete Aluminum Entrances



OKLAHOMA CITY, OKLAHOMA

P.O. BOX 1013

"Supermarket" For Brick Shows Many Types From 30 States

A brick "supermarket" in Detroit is the Kurtz Brick Company's building and display yard. Paul Kurtz, president of the company, spent three years searching the country for different types of brick. The result, an exhibit of bricks from 30 states, is believed to be unequalled in the United States. Edward M. Newman, A.I.A., is architect in charge.

The whole layout is above, with the free-standing masonry wall, left, 100 ft long and 25 ft high; it consists of 17,000 bricks in 50 different styles and is divided into 40 sections. The photograph below shows the wall and some of the smaller free-standing walls.



The building at right of the drawing contains a "brick gallery" where more than 200 different clay building materials are exhibited for architects, contractors, and builders. It also includes a conference room where architects may bring clients for consultation after showing them the displays.

The displays.

The display panels outside range from 4 by 7 ft to 12 by 22 ft and show the various bricks set in permanent form in mortar with different types and colors of bonds and joints. The assortment at the Kurtz establishment includes face brick, sand moulds, glazed brick and tile, ranging from hand-chiseled rockfaced adobes of New Mexico to the colonial sand moulds of the Virginias, from Roman to Norman, and from antique to Acapulco.

more news on page 336

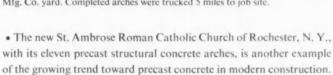
These soaring two-unit precast concrete arches are 36' high at mid-point and 42' wide.



PRECAST CONCRETE ARCHES form basic structure for new church



Lehigh Early Strength Cement concrete is poured in arch form at Goodstone Mfg. Co. yard. Completed arches were trucked 5 miles to job site.



The arches, each higher than a 3-story building and weighing 23 tons, were cast in two sections at the Goodstone Mfg. Co. plant.

In precasting these arch units, the manufacturer used Lehigh Early Strength Cement for maximum efficiency and economy. For example, forms were stripped and ready for reuse in 18 to 24 hours. And a faster production schedule cut labor costs an estimated 30%.

This is typical of the advantages of Lehigh Early Strength Cement in modern concrete construction.

LEHIGH PORTLAND CEMENT COMPANY
ALLENTOWN, PA.



Three of the four cranes required to position the arches. Note two workmen securing joint between $11\frac{1}{2}$ ton arch halves.

Architect: Sanford Shanley, New York, N.Y.

Associate Architect: Raymond Ashley, Rochester, N.Y.

Consulting Engineers: Severud-Elstad-Krueger & Assoc., New York, N.Y.

General Contractor: Frank G. Maggio & Bros., Rochester, N.Y.

Manufacturer of Precast Arches: Goodstone Mfg. Co., Rochester, N.Y.



- . LEHIGH EARLY STRENGTH CEMENT
- . LEHIGH MORTAR CEMENT
- · LEHIGH PORTLAND CEMENT
- . LEHIGH AIR-ENTRAINING CEMENT



How Ceco teamwork helps architects shape the skyline of America

STEELDOMES . . . STEEL JOISTS . . . CECOFRAMES . . . CURTAINWALLS
Only Ceco has the variety to allow architects the fullest freedom

Every architect should have freedom in design—freedom to make best use of knowledge and imagination. He needs building materials which will give him that freedom. And here is where Ceco provides welcome assistance, especially when called in before plans are drawn. Result: almost every skyline in the U.S.A. reflects Ceco teamwork with architects. Yes, from Littletown to Middletown to Metropolis, Ceco products are specified by architects in creating the building face of the nation. Ceco Steel Products Corporation. General offices: 5601 West 26th Street, Chicago 50, Illinois. Offices, warehouses and fabricating plants in principal cities.





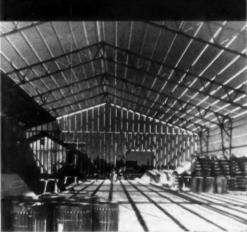
If open floor area is wanted in reinforced concrete, the answer is waffle-type flat slab construction formed with Ceco Steeldomes. Wide column spacings are easily achieved with Steeldomes, because of (a) the basic economy of two-way construction, and (b) the savings of dead-load through use of a joist framing system. Projecting beams are eliminated-story heights kept to the minimum. Splayed heads and drop panels can be eliminated, too. Your client saves on concrete, steel and labor . . . gets, in return, wide open spaces he can convert to profit. R/C duct underfloor electrification is readily installed, allowing electrical and telephone outlet flexibility for the life of the building.



■ If you want to exercise your architectural imagination, turn to Ceco Aluminum or Steel Curtainwalls. Using experience and sound engineering principles, Ceco can accommodate almost any architectural design. This frees you of limitations. Ceco multions and windows are proven to be sound in engineering, practical in application and pleasing in appearance. So to achieve your artistic goal in a practical way, see your Ceco man for his engineering advice before you sit down at the drawing board.



■ If lightweight open floors are wanted in structural steel, the most practical and economical solution can be found in *Ceco Open-Web Longspan* and *Shortspan Steel Joists*. Light weight but rigid construction with Ceco Steel Joists reduces weight of supporting beams, columns and footings, saving materials throughout the building. Pipes and ducts are easily placed through the open webs of Ceco Joists, making it unnecessary to increase story heights. This saves materials, permits low silhouette exteriors. Construction time is kept to the minimum when steel joists are used. An exclusive feature: Low cost quality underfloor electrification is obtained by using Ceco Electro-Channel Steel Joists in combination with Ceco standard joists.



■ If standard clearspan design in one-story construction is wanted, Cecoframe Steel Buildings fill the need. Durable Cecoframe structures are ideal for warehousing and manufacturing—for machine shops and utility buildings—can also serve a variety of light-occupancy commercial and industrial purposes. Complete freedom is offered by Cecoframes because they can be enclosed with any material—such as walls of windows, engineered Cecoroll galvanized steel roofing, steel panels, brick, block or wood, with hollow-metal or overhead doors. Cecoframes are designed on open-web steel joist principles for great rigidity. You have freedom in layout because Cecoframe structures can be placed side by side or in L shapes.



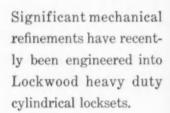
IN CONSTRUCTION PRODUCTS CECO ENGINEERING MAKES THE BIG DIFFERENCE

Ceco Steelforms / Concrete Reinforcing / Steel Joists / Roofing Products / Cecoframe Buildings / Curtainwalls, Windows, Screens Hollow-Metal Doors / Metal Lath

LOCKWOOD as II

hidden features

re year-after-year satisfaction



When you specify LOCKWOOD, you can be sure of continuously smooth, trouble-free lockset operation because of important hidden features such as these:



NO KNOB-WOBBLE

Lockwood's precision bearing makes "knob-wobble" an impossibility. The knob shank rides smoothly in the counterbored housing cap. Both parts are brass forgings.

STAY-TIGHT ROSES

Lockwood's exclusive "stay-tight" roses prevent the installation from loosening in service. The rose retainer-spring locks in grooved thread-ring.

LONG-WEARING ALUMINUM KNOBS

Cast aluminum knobs have forged brass shanks ensuring long service. Shanks are screwed in and pinned. (Note pin at lower edge of cutaway section).

See our condensed catalog 18eLO in Sweet's Architectural File, or write for a reprint.

LOCKWOOD

LOCKWOOD HARDWARE MANUFACTURING COMPANY, FITCHBURG, MASS.



Homes built on concrete slab need the warmth and resilience of OAK FLOORS

Hor greater sales appeal in your slab-on-ground homes, use Oak Flooring...preferred by home buyers everywhere. Oak Floors provide needed resilience and warmth so necessary to health and comfort. Their beauty and durability are added sales features.

The screeds-in-mastic installation method provides a sound nailing surface for Strip Oak Flooring over concrete and is used by many leading builders. It's easy, fast and effective . . . has the approval of lending agencies . . . and meets the budget of lowest priced homes. Try it in your slab-on-ground homes for greater sales appeal.







Write for free Installation Manual. NATIONAL OAK FLOORING MANUFACTURERS' ASSOCIATION 858 Sterick Building . Memphis 3, Tenn.

Beautiful building for a beautiful business

Avon Products, Inc., is in the business of beauty . . . specifically, cosmetics. It is understandable that the company should desire to reflect its regard for beauty in its surroundings and appointments. This effect has been realized in a high degree in an office building in Morton Grove, Illinois. The building is $260' \times 80' \times 26'$, and is completely glass-clad.

Pittsburgh's 82-X Curtain Wall System is the setting for a special Gray CARRARA Structural Glass in side walls and spandrels, and achieves an extremely attractive decorative effect. Its beauty is permanent, for CARRARA will not stain or fade.

In visual areas both Pittsburgh Polished Plate Glass and TWINDOW are used, the latter where added insulation as well as clear vision is desirable. The clean, simple lines of TUBELITE doors make each entrance inviting. Other metal construction utilizes the grace, strength and beauty of PITTCO Metal.

There are many practical advantages in using Pittsburgh Plate Glass Company products for decorative purposes. Our Architectural Representative nearest you will be glad to assist in the solution of any of your problems. There is no obligation on your part.

PITTSBURGH GLASS

... the basic architectural material

Reception rooms seem larger and less confining with full length partitions of Pittsburgh Polished Plate Glass.



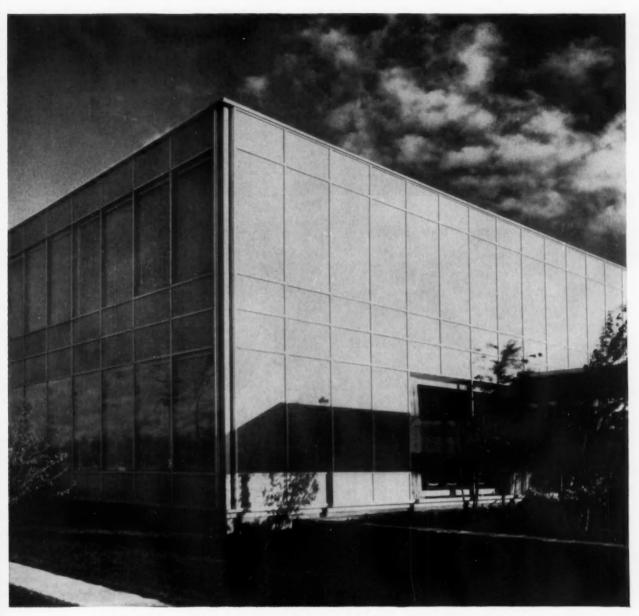
This lunchroom is bright and cheerful because of the natural light admitted through the full length Pittsburgh Polished Plate Glass windows.



The beauty of the garden is carried into the lobby with full length windows of Pittsburgh Polished Plate Glass.







Architect: Skidmore, Owings & Merrill, Chicago, III. Contractors: Chell & Anderson, Chicago, III.



PAINTS . GLASS . CHEMICALS . BRUSHES . PLASTICS . FIBER GLASS

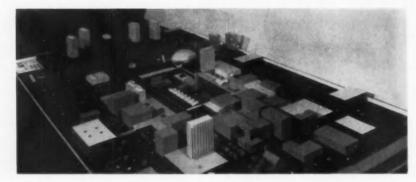
PITTSBURGH PLATE GLASS COMPANY

IN CANADA: CANADIAN PITTSBURGH INDUSTRIES LIMITED

The Record Reports

Proposed Joliet Redevelopment Planned by Illinois Students

A plan for a redeveloped Joliet was recently presented to business and civic leaders of the Illinois city 30 miles from Chicago. Graduate students in architecture of the University of Illinois, under the direction of Professor A. Richard Williams, evolved the plan for the downtown area. Eleven students worked on the design, including Hwei-Chih Hsiu, whose preliminary concept won a prize from the Greater Joliet Com-



TYPICAL DETAIL:
Inside channel glazing

LASTO-MERIC TREMGLAZE

TREMTAPE

in curtain walls

New glazing and sealing techniques and products developed by Tremco research can insure leak-free curtain wall installations. Such techniques are described in the new publication "SEALANTS AND COMPOUNDS" which includes latest information, current specifications and detailed diagrams for glazing and curtain wall construction. Ask your Tremco Man for a copy, or write: The Tremco Manufacturing Company, 8701 Kinsman Road, Cleveland 4, Ohio, or The Tremco Manufacturing Company, (Canada) Limited, Leaside, Toronto, Ontario.

PRODUCTS AND METHODS FOR BUILDING MAINTENANCE & CONSTRUCTION

"When you specify a Tremco product
... you specify a Tremca service!"

mittee, and Edwin J. Drimmel, Jr., job captain and project architect.

The 7-by-11-ft model above, scaled one in. to 20 ft, shows how redevelopment might change a nine-block area. White buildings are proposed structures; darker ones are existing buildings which would be retained. Major high-rise buildings include the County-City Building, office building, hotel and transportation center, and housing project (across the Des Plaines River in the background).

Below is a rendering of one of the proposed shopping malls. The Darcy Building (extreme left) and St. Mary's Church (spire in the distance) are among present structures which would be kept. The mall includes benches, pools, refreshment kiosks, and sheltered walks.

The redevelopment plan envisions four levels: underground building service; ground level with pedestrian traffic through the area and diversion of motor traffic around it; roof-deck shops and civic center plazalevel; and roof plan, including penthouses. Some of the main features are: parking for 8000 cars (5000 more than at present) in multi-level garages and covered areas; a civic center on the river front; two shopping malls; exclusion of auto traffic from the central area; new housing; a new department store, theaters, etc.

The Greater Joliet Committee, Inc., paid all expenses, including field trips by students.



more news on page 340



LIGHTSTEEL

shows its versatility in modern San Diego home

The design flexibility of LIGHTSTEEL is illustrated dramatically in the construction of this modern concrete-block and steel-frame house in Southern California. It is used for all structural members.

Exposed LIGHTSTEEL joists and Penmetal STEELDEK, extending across the living and family-room ceilings, contribute importantly to the contemporary appearance of the interior. Welded in the center, the joists extend in a gentle upward slope to the outer walls. There are no center supports to obscure the panoramic view of San Diego and the Pacific Coast.

The exterior features a flat roof and floor-to-ceiling, aluminumframed windows running the full length of the two sides. Design relief is provided by the butterfly roof over the living room section.

According to Earl Gifford, the builder, "LIGHTSTEEL affords speed and ease of construction of homes, and

due to flexibility in design, provides more expanse for California living. The owner of a LIGHTSIEEL home will find maintenance and insurance costs reduced. Such things as shrinkage causing wall cracks, and other problems are automatically eliminated."

LIGHTSTEEL gives the architect more to work with, gives the builder a better structure that is easier to erect. Write for technical information. Ask for a copy of catalog SS-27.

PENN METAL COMPANY, INC.

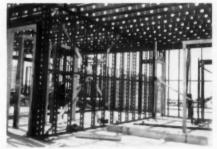
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BUILDER: Gifford Construction

LIGHTSTEEL SUPPLIER: Chambers Steel Company

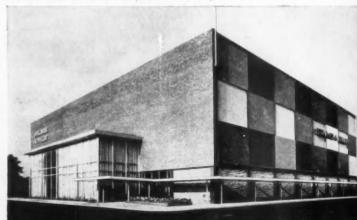
Day-Brite lights the architect's brightest efforts

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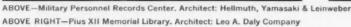
Lambert Engineering Co. Architect; Syl G. Schmidt & Associates



Stix, Baer & Fuller(Westroads Store) Architects: John Graham & Co. (Seattle-New York)









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The Record Reports

All-Glass Handball Court Provides Many Spectators With View

The first completely glass-enclosed handball court has been built at the Young Men's Christian Association in Aurora, Ill. Bertram A. Weber, F.A.I.A., of Chicago was the architect; the Arnold Lies Company was general contractor.

The court is expected to be a stimulus to the ancient sport because it allows 400 spectators to watch matches; there is also a large glass

panel in the rear wall (shown in the two smaller photographs) for televising matches. A traditional masonry court has only a tiny gallery for about a dozen spectators.

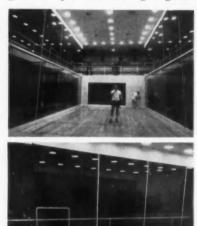
A handball court with glass walls starting 10 ft from the floor on two sides had already been built in Chicago, developed by R. Kendlar, president of the U. S. Handball Association, but achievement of the Aurora court was the result of the determination of the Y.M.C.A.'s building committee, under the chairmanship



of James H. Critton, and advised by Mr. Kendlar.

The glass in the side walls of the court is 40 ft long and 20 ft high. Glass ¾-in. thick, to withstand impact from the bodies of even the heaviest players, was selected. Then a special bevel-edge setting bar to be used with the 9-by-6-ft bevel-edged glass panels was designed. When bolted into position, the bevel bars pulled the panels into alignment, forming the flush joints necessary to give a "true bounce" of the ball off the walls.

The glass is said to need very little maintenance. Players, incidentally, say they are not conscious of glass or spectators during a game.







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See HAWS Catalog in Sweets Architectural File for data on the entire Haws line.





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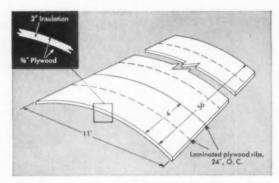
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Prefabricated roof vaults are 11 feet wide at the chord, and 56 feet long (40 foot span plus 8 foot cantilever both ends). Key to system is the outstanding shear strength of the stressed fir plywood skins.

FIR PLY

ARCHITECT: Theodore T. Boutmy, A. I. A.
George Kosmak, Consultant
John E. Brown, Structural Engineer

PLYWOOD VAULTS designed and engineered by Berkeley Plywood Co., Oakland

THESE lightweight fir plywood stressed skin barrel vaults designed for a California yacht club provide large clear floor areas at low cost plus an attractive profile and interior.

Combining roof decking, insulation and ceiling, the prefabricated vaults span 40 feet from front to rear and 11 feet from valley to valley, without use of beams or trusses. Vaults are cantilevered 8 feet front and rear; spouts which join units at the spring lines extend an additional 10 feet to act as gargoyles in carrying off water.

The roof system provides complete freedom in interior arrangements. Additions can be made simply by adding new vaults or extending the existing ones.

Structurally, the entire roof acts as a rigid plywood diaphragm in transferring lateral loads to the plywood end and shear walls. Two test vaults were successfully used at the San Francisco Arts Festival. Berkeley Plywood is contemplating mass producing the vaults as a standard construction component.

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Illustration: Memorial Hospital, Albany, N. Y., featured in The Modern Hospital as the "Hospital of the Month" in August 1958. This 235-bed, \$3.5 million hospital replaces an older building a few blocks away. Architects: Curtin and Riley, Boston. The architects subscribe to The Modern Hospital; the hospital has three subscriptions in force; one in the name of the hospital, one to the business manager, one to the chief dietitian.



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Washington Topics

continued from page 48

There is a provision that the Federal contribution, or loan, would be repaid by a district only if the locality were able to increase taxes to cover the debt. Should the local government be unable to make the payments, the Federal government would write off the amounts as direct aid 10 years after the school bonds have been retired.

Colleges Also Covered

A second proposed measure, covering colleges, proposes Federal grants amounting to 25 per cent of the cost of paying off construction loans. Both public and private colleges would be eligible. Dr. Flemming estimated the program could generate \$2 billion worth of new facilities over a five-year period.

Maximum Federal outlay for the college assistance would be \$25 million annually, with the total cost to the Federal government limited to \$500 million. The Federal outlays would not be made until fiscal 1961.

New Hospital Data Offered In USPHS Report

The first detailed analysis of shortstay hospital use based on data collected in interviews for the U.S. National Health Survey is given in a new Public Health Service publication.

The report, "Hospitalization—Patients Discharged from Short-Stay Hospitals," designated as Public Health Service Publication No. 584-B7, can be obtained from the Superintendent of Documents, Government Printing Office, Washington 25, D.C., at 30 cents per copy.

It reveals that more than 16,738,-000 persons spent varying periods in these hospitals for a total of more than 143,322,000 hospital days during the year ending June 30, 1958.

A short-stay hospital was defined as one for which the type of service is general: maternity; eye, ear, nose and throat; osteopathic hospital; or hospital departments of institutions. For purposes of the report, the surveyed population consisted of the civilian non-institutional population of the country.

The report shows that the number of patients discharged from such hospitals averaged 99.4 per 1000 of the surveyed population.

It is estimated from the data gathered that 70.4 per cent of the hospitalizations lasted one to seven days, that another 18 per cent were completed in eight to 14 days; only 3.5 per cent lasted 31 days or longer.

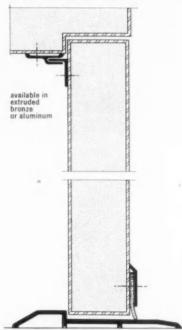
continued on page 352

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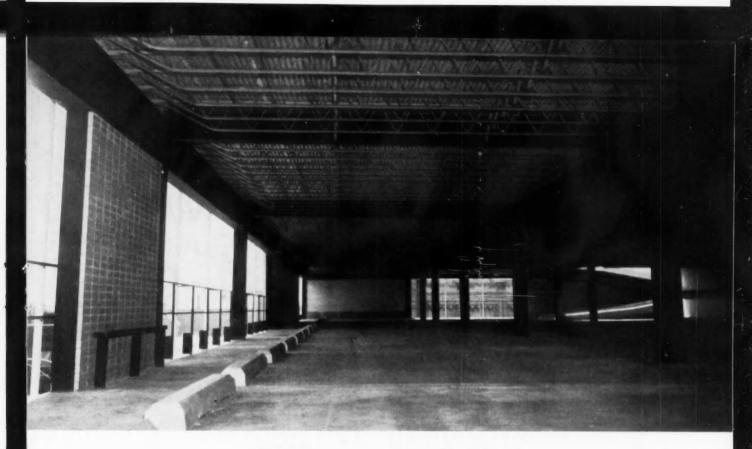
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This carport was designed by Beine, Hall & Curran, Architects and Engineers, and constructed by Witter-Gaddis Corporation, both of Gary. American Bridge fabricated and erected 189 tons of AmBridge Standard Steel Joists and erected 500 tons of structural steel.

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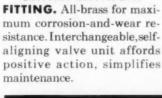


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Architect: John Carver, 2112 Spruce St., Philadelphia, Pennsylvania

> Heat absorption provided by 38,750 sq. of Mississippi Coolite glass make patients more comfortable in the John J. Kane, Allegheny County Institution District (Hospital for the Indigent Sick).

Associate Architects: Button & McLean — Mitchell & Ritchey, Pittsburgh, Pennsylvania General Contractor: Sherry Richards Company, Chicago, Illinois Glazing, United Plate Glass Company, Pittsburgh, Pennsylvania

At the Philadelphia International Airport, modern vistas are created by 10,000 sq. ft. of 60" wide lights of Polished Misco (wired glass).

Architect: Carrol, Grisdale and Van Allen, Philadelphia, Pennsylvania Glazing: Pittsburgh Plate Glass Company

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Washington Topics

First Bills to Clear Senate Up Construction Funds

The first major bills to clear the Senate at this session of Congress were construction measures—housing and aid to airport development.

The debate on this legislation was acknowledged as the first true test of the President's new determination to balance the budget in fiscal 1960; and in both instances, the Senate approved larger amounts than Mr. Eisenhower wanted. The housing bill as voted by the Senate is about \$1 billion above the President's desire for a six-year program.

The Senate extended Federal Housing Administration insurance of home improvement loans (Title I) and gave that agency an additional \$10 billion of total insurance authority. The bill authorized \$2.1 billion in Federal contributions to urban renewal programs over six years, permitting the outlay of at least \$350 million each year. The Federal portion was left at two thirds although the White House had asked for a gradual reduction to one half.

The Senate measure on housing also approved \$150 million for direct loans to veterans. This was a compromise from the \$300 million approved by the Banking Committee.

The bill also authorized \$300 million for college housing loans, again an average compromise between the \$400 million sought by the committee and the \$200 million in the Administration proposal. A sum of \$125 million was provided for government loans to colleges for construction of classrooms and laboratories.

The special program aiding builders in construction of housing for elderly persons was extended in the Senate version and the ceiling on cost of houses FHA can insure under other programs was raised.

As work on the omnibus housing measure was pushed on the House side, it appeared an increase in interest rates on both FHA-insured rental housing and VA-guaranteed mortgages, sought by the White House, would be approved.

An amendment to the Senate bill secured by Senator Joseph Clark (D-Pa.) would require the outlay of an added \$150 million for urban renewal in any year if applications required it. In no event, however, would the \$2.1 billion ceiling for the program in six years be exceeded.

A more liberal measure, all the way around, was approved by the House Banking Committee.

continued on page 358





Yes, Times Have Changed...

(A Short History of Architectural Progress)

Time was when frame construction was sufficient for most requirements, and the cut-out half moon symbolized the only decor known to the trade.

Most requirements, but not all. Halloween pranks, for example, caused no end of consternation and inconvenience. (See illustration.)

Architecture has marched hand in hand over the years with advances in human comfort, until today not even our museums preserve what once served virtually every American family. Enough of the past.

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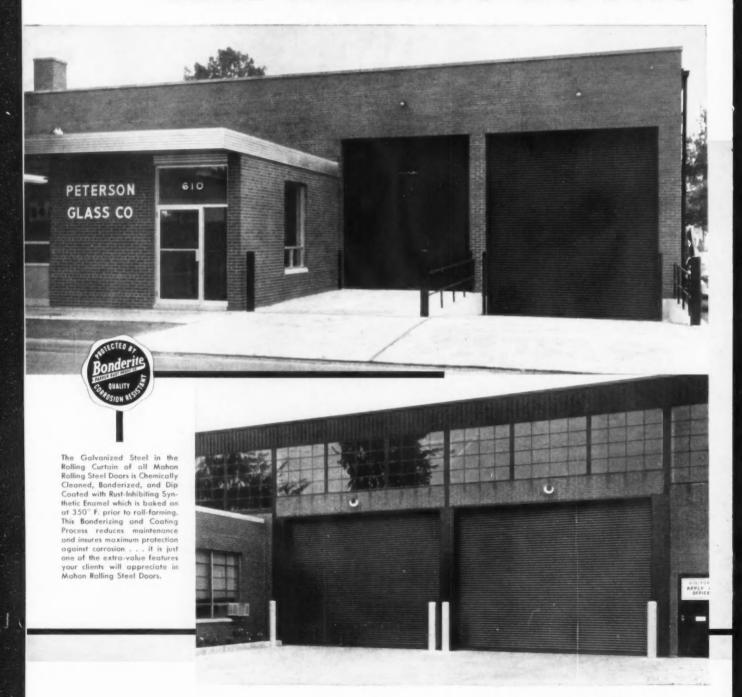
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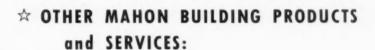


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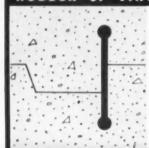
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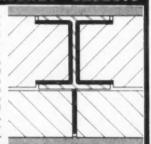
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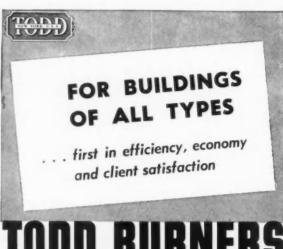


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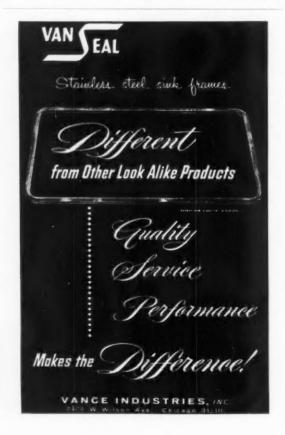


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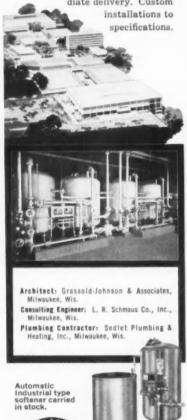
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Washington Topics

The Senate included authorization of an additional 35,000 public housing units over repeated Republican protests. There are another 16,000 units to carry over from existing programs.

Double Airport Request

The Senate-passed airport aid measure stipulated that \$465 million could be granted by the Federal government to assist in construction and improvement of airports over four years. The President had asked for \$200 million for the same period.

The Senate voted to leave in the measure the use of this money for construction of airport terminal buildings as well as runways and taxiways. There had been a move to limit the funds to engineering aspects of airport work.

The bill as finally voted by the Senate provides for \$100 million in each of four years to be matched by the states or local agencies dollar for dollar. Seventy-five per cent of this would be allocated on the basis of population, the balance on the basis of need.

A.I.A. Lambastes PHA as "Administrative Morass"

The American Institute of Architects spoke up bluntly on the subject of public housing and architects in recent testimony before the Senate Banking and Currency Committee by J. Roy Carroll Jr., F.A.I.A., of Philadelphia, A.I.A. Middle Atlantic regional director.

The A.I.A. Board of Directors, at its November meeting in Clearwater, Fla., had voted to argue its case in public after prolonged and unfruitful consultations with the Federal Government agency.

Mr. Carroll told Congress that because of administrative difficulties created by the Public Housing Administration architects are losing interest in the public housing program. He noted evidence of "a decided falling off of interest . . . of an apathy among our own members, of the lack of desire of leading architectural firms to participate in it."

Here are selected excerpts from the Carroll testimony:

"That many competent architects today will not consider accepting a commission for a public housing project is indeed an unfortunate state of affairs. It is one produced chiefly through a feeling that it is no longer feasible to use architecture to its fullest capacity to create better living through public housing. . . Ponderous bureaucracy and the atti-

continued on page 364

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4. APARTMENTS: SMALL PROJECTS

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5. CAMPUS DORMITORIES AND APARTMENTS

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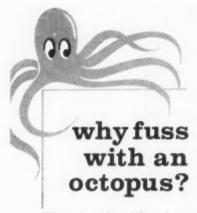
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Washington Topics

tudes that naturally develop from it are frustrating and serve only to stimulate the hostility of those whose support is needed. . . Public housing today is bogged down in an administrative morass. . . . The PHA contract goes far beyond the customary contract of a public agency in holding the architect personally liable for errors and omissions, which may well be beyond his control. It has been described by a distinguished Philadelphia attorney as the most one-sided document he had ever seen. . The fee schedule is entirely inadequate and should be junked. However adequate the fees may appear to be to the PHA, they certainly are not appealing to an architect and will not attract to the program that competent and dedicated architectural service which the program demands. . . . Current projects, with few exceptions, are dreary, unimaginative masses that can hardly be characterized as architecture '

U.S. Support of Urban Renewal Urged by Feiss for A.I.A.

Another witness for the American Institute of Architects before the Senate Banking and Currency Committee, Chairman Carl Feiss of the A.I.A. Committee on Community Planning, chided the Federal Government for what he described as its failure to give proper support to the urban renewal program it had authorized.

Mr. Feiss said the Federal attitude had made the program "on again, off again: catch-as-catch can." This approach, he asserted, is "sheer foolishness."

"After a painfully slow start," Mr. Feiss declared, "the program finally commenced to roll only to bog down again when it failed to receive the necessary support from the Federal government."

His criticisms were directed at the failure of Congress to provide urban renewal funds in volume sufficient to keep an adequate program in continuous operation. Only "postage stamp" size projects are possible under the allocation methods employed by the Urban Renewal Administration, he contended.

"Plans for well developed largescale projects that could not only eradicate the diseased areas but indeed turn the tide against further decay, ground to a stop because they are not eligible for consideration under the dismal rationing system now in effect," he testified. "What this means in terms of withdrawal of pri-

continued on page 370



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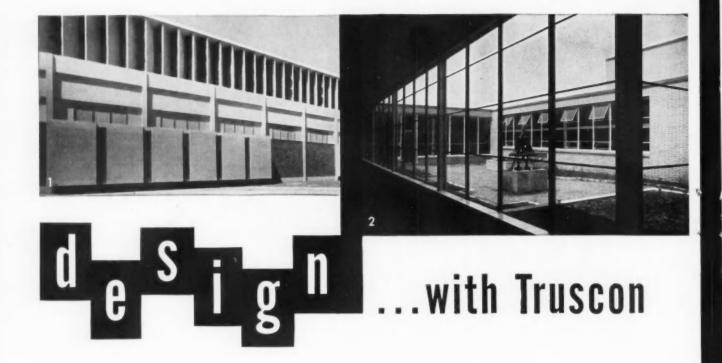


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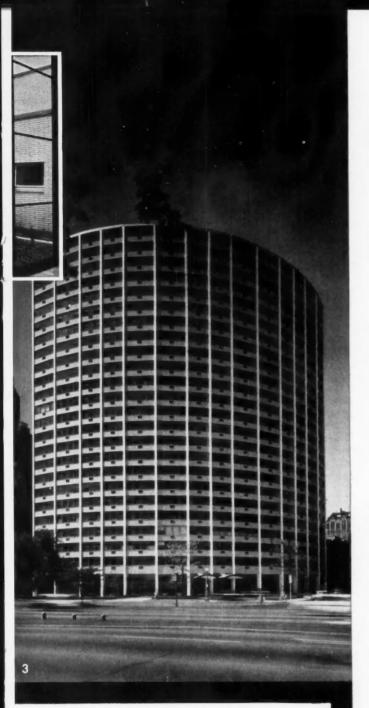
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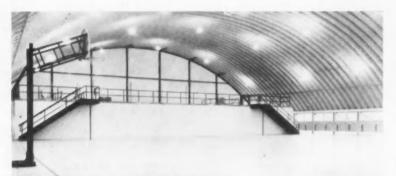
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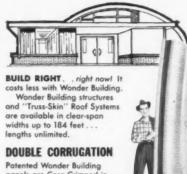
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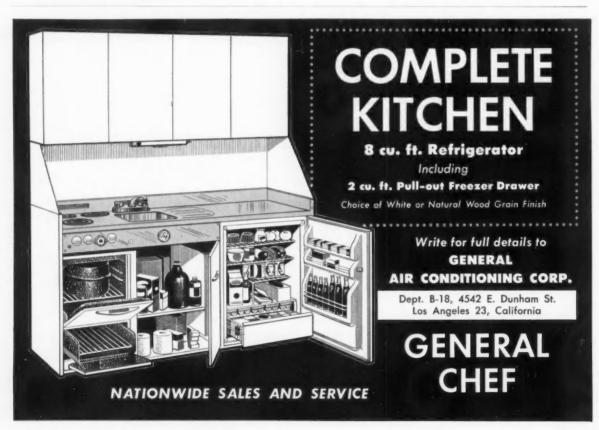
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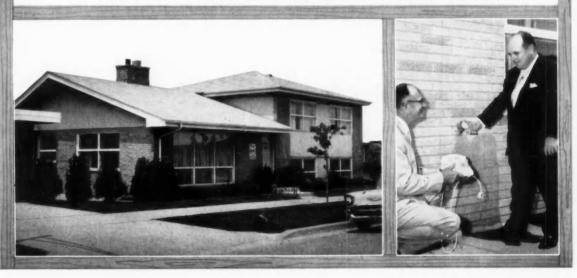
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Washington Topics

vate investment money, loss of interest by sponsors, and the frustration of the people in the communities involved is hard to calculate. And in the end, this procrastination will prove extremely costly. Each delay and slowdown in the program makes the job of restoring our cities that much more difficult and inevitably far more expensive."

He noted a need for advance planning because of the lag required between authorization and actual construction. And he called on Congress to reduce the present residential requirements to make possible the improvement of the physical, structural and economic shape of the central city.

He placed A.I.A. on record as supporting provisions for additional programs, such as universities, to be developed as a natural part of the urban renewal process. And continuation of the 701 planning assistance program to small towns also was recommended.

Specifically, Mr. Feiss said Congress should promptly enact a comprehensive program with assurance that it will be sustained at a continuing high level for the next 10 years.

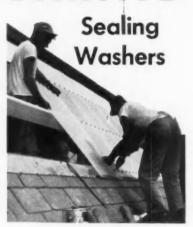
Lease-Purchase Procedures Under Fire Again

Budget Director Stans and Rep. Albert Thomas (D-Tex.) locked horns over the lease-purchase building program in recent closed hearings where President Eisenhower's fiscal 1960 budget was being considered. Partial release of the testimony showed that Representative Thomas charged Mr. Stans with being "a pretty expensive luxury," and with costing taxpayers \$35 million in allowing construction of 30 projects previously in the lease-purchase program. (The \$35 million was Representative Thomas' estimate of the additional cost of the buildings over what they would cost if constructed with direct appropriations.)

When Mr. Stans was allowed to reply, he explained that last February, Representative Thomas had asked the General Services Administration not to bind the United States in any more lease-purchase construction contracts. (The law had expired in July 1957.) The subject was discussed with budget officials and GSA Administrator Franklin G. Floete. GSA was allowed to continue with the 30 authorized jobs since all but three had been advertised for financial bids and all but 11 for construction bids. It was feared, Mr. Stans said, that damage suits would result if the program on these was halted.

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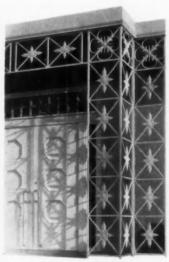


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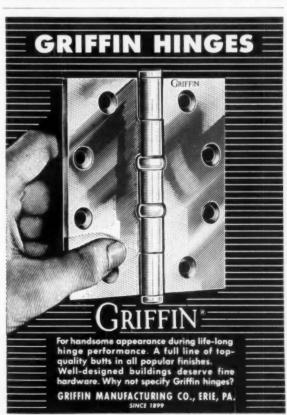
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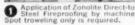
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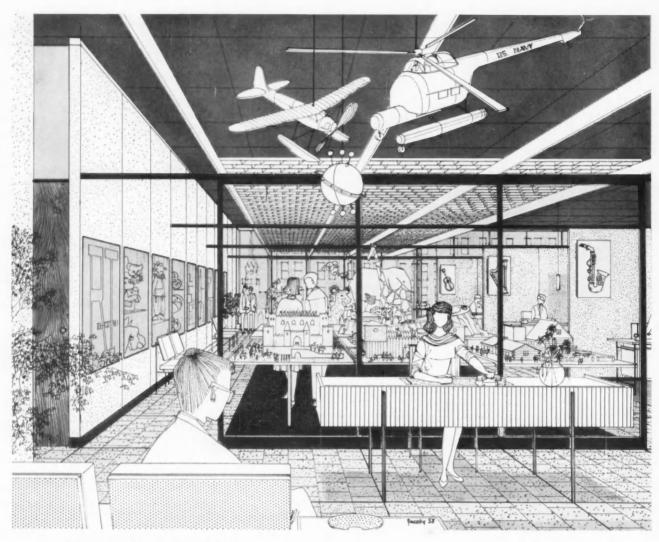
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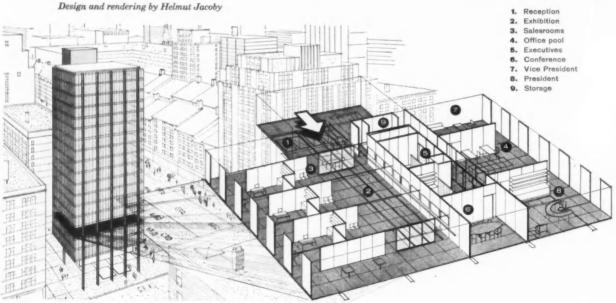
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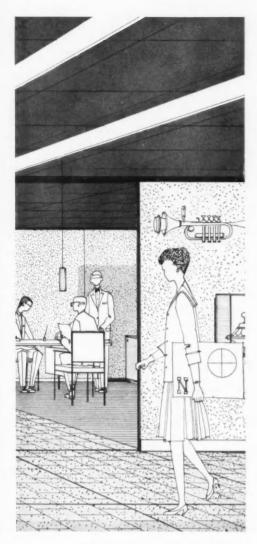
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REQUIREMENTS

The sales department needs a large exhibit area for the display of toys and a series of adjoining alcoves for the use of salesmen. The administrative section is to be segregated and provision made for executives' rooms, stenographic pool and storage facilities.

The firm wants to use movable walls so that space division, particularly in the sales department, can be rearranged from time to time. Also the movable walls should be of the type that can be painted and redecorated at frequent intervals to provide for seasonal merchandising changes.

SOLUTION

The reception room and exhibit area is given a central location. It runs from the elevator lobby to the opposite window wall. Along one side is a series of sales alcoves with free standing partitions 7′ 6″ high. On the other side of the exhibit area is a floor-to-ceiling partition containing shadow boxes for small displays. Behind this 12′ 0″ partition is the administrative section.

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RequiredReading

Trees . . . cont. from page 63

The greater part of the book is a detailed, carefully written text on tree-house construction for the 10-to 14-year-old boy. There are sections devoted to basic tree facts, tools, lumber (used and new), and fastenings. Several types of houses are fitted to appropriate shapes of tree, and two complete house projects are illustrated step by step from sill leveling to ladder rigging. Good spring reading for young and old with well-planned format and clear drawings and type.—JOHN T. WEEKS

Two Useful Handbooks

CONSTRUCTION ACCOUNTING AND FINANCIAL MANAGEMENT. By William E. Coombs. F. W. Dodge Corp., 119 W. 40th St., New York 18. 481 pp., illus. \$12.85.

In this book Mr. Coombs, an attorney and certified public accountant who is secretary and treasurer of a large general contracting firm, specifically recommends proper accounting and management procedures for the construction industry. Starting with the basic operating and accounting patterns of a construction firm, the author covers in 24 detailed chapters every aspect of the topic. There are 200 checklists, illustrations, and sample forms and reports.

GROUNDS MAINTENANCE HANDBOOK. By H. S. Conover. F. W. Dodge Corp., 119 W. 40th St., New York 18, 501 pp., illus. (2nd ed.), \$10.75.

Written for those professionally responsible for the maintenance of grounds of any size, this book is a complete exposition of the subject. Mr. Conover, now landscape architect for the New York Power Authority, has expanded the volume from a manual he developed while manager of public services for TVA.

On Schools

THE NEW SCHOOL: MASTERWORKS OF INTERNA-TIONAL SCHOOL ARCHITECTURE. By Alfred Roth. Frederick A. Praeger, Inc., 15 W. 47th St., New York 36, 279 pp., illus, \$11.50.

SAVING DOLLARS IN BUILDING SCHOOLS. By David A. Pierce. Reinhold Publishing Corp., 430 Park Ave., New York 22. 112 pp., illus. \$5.95.

GUIDE FOR PLANNING SCHOOL PLANTS. National Council on Schoolhouse Construction, Peabody College, Nashville, Tenn. 254 pp. \$3.

SCHOOL NEEDS IN THE DECADE AHEAD. By Roger A. Freeman. Institute for Social Science Research, 917-15th St., N.W., Washington 5. 273 pp. \$5.

THE AMERICAN HIGH SCHOOL TODAY. By James Bryant Conant. McGraw-Hill Book Co., 330 W. 42nd St., New York 36. 141 pp. \$1 (paper) or \$2.95 (cloth). the first handbook to provide complete information on supervising and testing building construction

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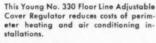
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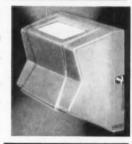
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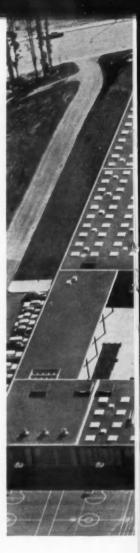




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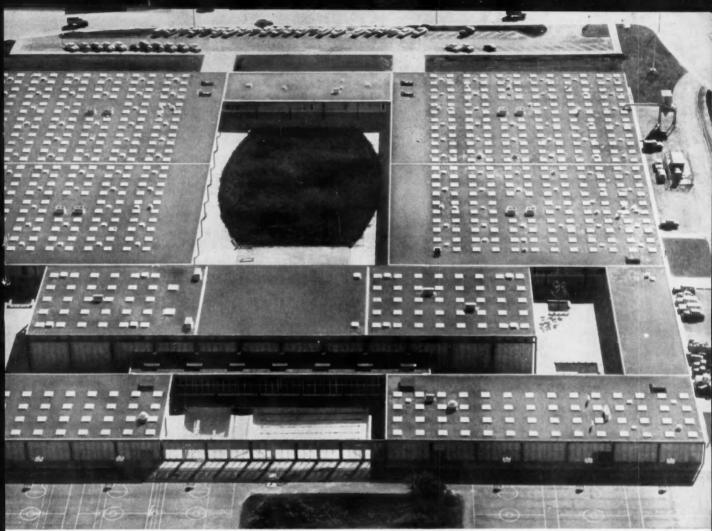


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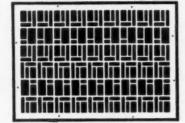


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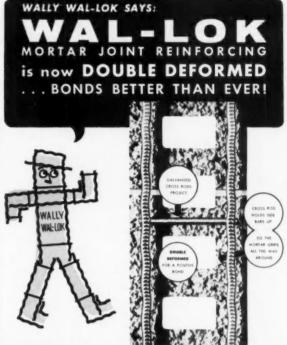


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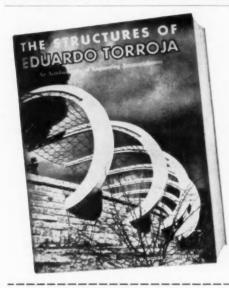
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Current Trends in Construction

As Reflected in Contracts for Future Construction in the U.S. Reported and Tabulated by F. W. Dodge Corporation

1959: UP TO THE SAME OLD TREND: UP

In its first report for 1959 on contracts for future construction in the United States (except Alaska), F. W. Dodge Corporation reported an increase of 12 per cent for January 1959 compared with the 1958 month. Total for the first month of the new year was \$2,319,167,000.

A 31 per cent increase in dollar volume of contracts for residential building—one- and two-family houses and apartments totaled \$1,021,516,000—led the January upswing; the number of dwelling units represented by these contracts was 84,166, up 33 per cent from January 1958.

Nonresidential contracts also contributed to the increase: at \$818,-225,000 a gain of eight per cent. Commercial, hospital and social and recreational buildings were the leaders here; and gains were also recorded in contracts for religious and miscellaneous nonresidential buildings.

In the heavy engineering category in January, contracts totaled \$479,-426,000, down ten per cent compared to January 1958; while public works, aided by contracts for streets and highways, showed an increase, utilities were down because of a sharp drop in electric contracts.

Trends by Types

sions."

Excerpts from the section of the review which discusses trends in various construction categories are presented below. All figures are 48-state totals for the year 1958 (Alaska is excluded) and all percentage changes are comparisions with the full year 1957.

some non-economic factors that caused construction to increase even

during the three postwar recessions.

But conversely, the high level of con-

struction activity must have been a

heavy contributor to the ease with

which we pulled out of these reces-

—Residential buildings. Contracts rose 13 per cent above 1957, reaching a total of \$14,696,000,000. The housing spurt in 1958 resulted chiefly from two factors: first, a general easing in money conditions in the first half of the year; and secondly, and more important, the passage by Congress of the emergency housing act of 1958 which had as its prime purpose the stimulation of homebuilding as an anti-recession measure.

—Industrial buildings. Contracts down 35 per cent: total \$1,400,000,000. By far the weakest category. It seems probable that manufacturing building contracts in 1959 will provide some impetus to construction in contrast to the record of the past two years.

—Commercial buildings. Contracts valued at \$3,197,000,000, down two per cent. Since midyear commercial buildings have shown signs of strength; second half 1958 contracts averaged seven per cent higher than the comparable period of 1957.

—Educational buildings. Contracts valued at \$2,908,000,000, down one per cent. This small dip is likely to be only temporary, however, as demand pressures, spurred by population gains, continue to mount.

—Hospital buildings. Contracts valued at \$879,000,000, up one per cent. During the past several years contracts for hospital construction have been moving steadily upward and this trend is likely to continue.

-Religious buildings. Contracts valued at \$746,000,000, up seven per cent. Very strong during second half.

—Recreational buildings. Contracts valued at \$500,000,000, up 17 per cent. Strong all year.

—Public buildings. Contracts valued at \$655,000,000, "a remarkable 39 per cent" over 1957. Types sharply up included public administration

buildings, jails and penitentiaries and armories.

1958: "A NEW RECORD-AS USUAL"

The construction industry's eleventh consecutive record year is analyzed in F. W. Dodge Corporation's annual review of construction contracts published last month in *Building Business*, the Dodge monthly bulletin.

Substantial gains in housing and highways are recognized as the chief instrument of the 1958 record. The year's cumulative total of contracts for future construction in the United States amounted to an all-time high of \$35,090,000,000, a gain of nine per cent compared to 1957.

The review, written by Dodge vice president and economist George Cline Smith and associate economist Edwin W. Magee, Jr., notes the following highlights:

—The record year was realized despite a recession in the first quarter of 1958.

—Contracts for housing and highways accounted for just about all the increase.

—Contracts for governmentowned projects rose much more rapidly than the private-ownership sector, although the latter began to rise sharply in the second half of 1958.

—One important category, industrial building, remained weak throughout 1958. It's expected that this situation will change as business improves and as the economy continues to grow.

—Apartments accounted for a larger share of the total dwelling units than in any year since 1951. They accounted for 17 per cent of the units reported in 1958, as compared with 14 per cent in 1957 and 10 per cent in 1956.

-Contracts for educational and science buildings were one per cent below 1957. This point is significant only because it marks the first time in the postwar period they failed to register an increase.

Releasing details of Dodge construction contract figures not normally made public, the review states that the greatest percentage increase in dollar volume of contracts in any single building type occurred in apartments, with contracts in this classification 43 per cent ahead of last year.

Notable increases were recorded also in contracts for public buildings, social and recreational buildings, electric light and power systems and public works.

Is Construction the Bellwether?

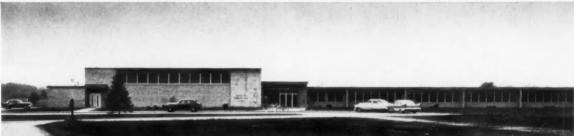
The review observes that the performance of the construction industry in the postwar period has been "nothing short of remarkable: come recession, come boom, every year reaches a new high point." And in this connection:

"It's interesting, and perhaps valuable, to speculate on what the course of the national economy might have been had the construction industry behaved otherwise. Major wars generally have been followed by major depressions, and there was considerable expert opinion a few years back that World War II would be no exception. But despite three opportunities, no depression developed. Is it pure coincidence that in each of the three postwar recessions, the nation's largest fabricating industry continued to grow?

"Obviously, it isn't easy to separate cause from effect in such a situation. There were many economic and

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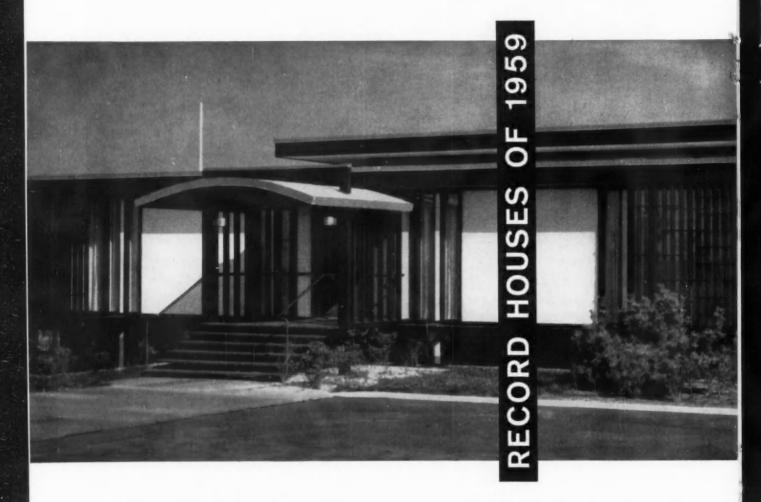
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House by The Architects Collaborative. Photographer: Joseph Molitor.

the structural, mechanical and electrical aspects of contemporary house design. In addition, the New Products Section and advertising pages will be a concentrated source of information on quality residential building products.

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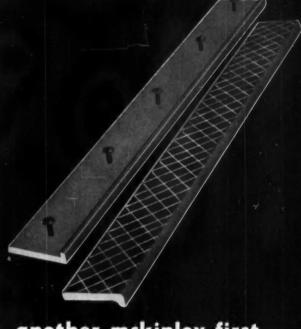
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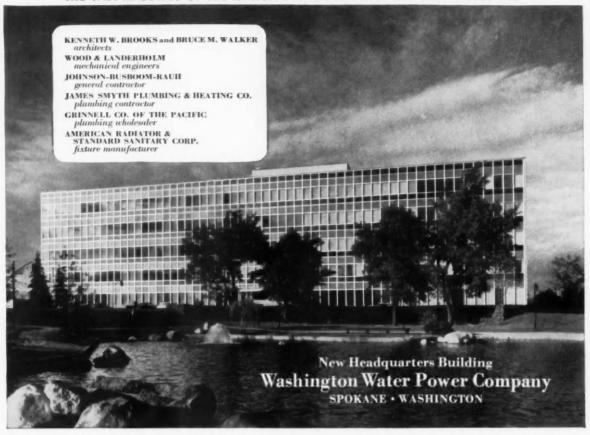
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